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ABSTRACT

The development and progress of environmental education in Scotland since the Gilbert report of 1974 are charted and reviewed in this publication. Environmental education is viewed as opening all disciplines and affecting all age groups. Emphasis is placed on the need for a central resource base where an internal conceptual structure could be developed with clearly defined aims and objectives. Topics addressed include: (1) changing environment of environmentalism (reviewing economic, social, political, and administrative trends and their environmental effects); (2) primary school experience (explaining initiatives related to policy-making, instructional issues, curriculum development and future directions); (3) secondary school experiences (discussing co-ordinating and training efforts and curriculum development); (4) continuing education (proposing models for community education programs); (5) organizations contributing to environmental education (summarizing the efforts of specific conservation agencies); (6) national and international dimensions (offering perspectives in the global nature of environmental education); (7) conclusions (discussing the need for an environmental ethic); and (8) principal recommendations (identifying the major areas of concern for the future of environmental education). Eighty-four references and information on the Scottish Environmental Information Network for Education conclude the document. (ML)

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LEARNING FOR LIVING
ENVIRONMENTAL EDUCATION IN SCOTLAND

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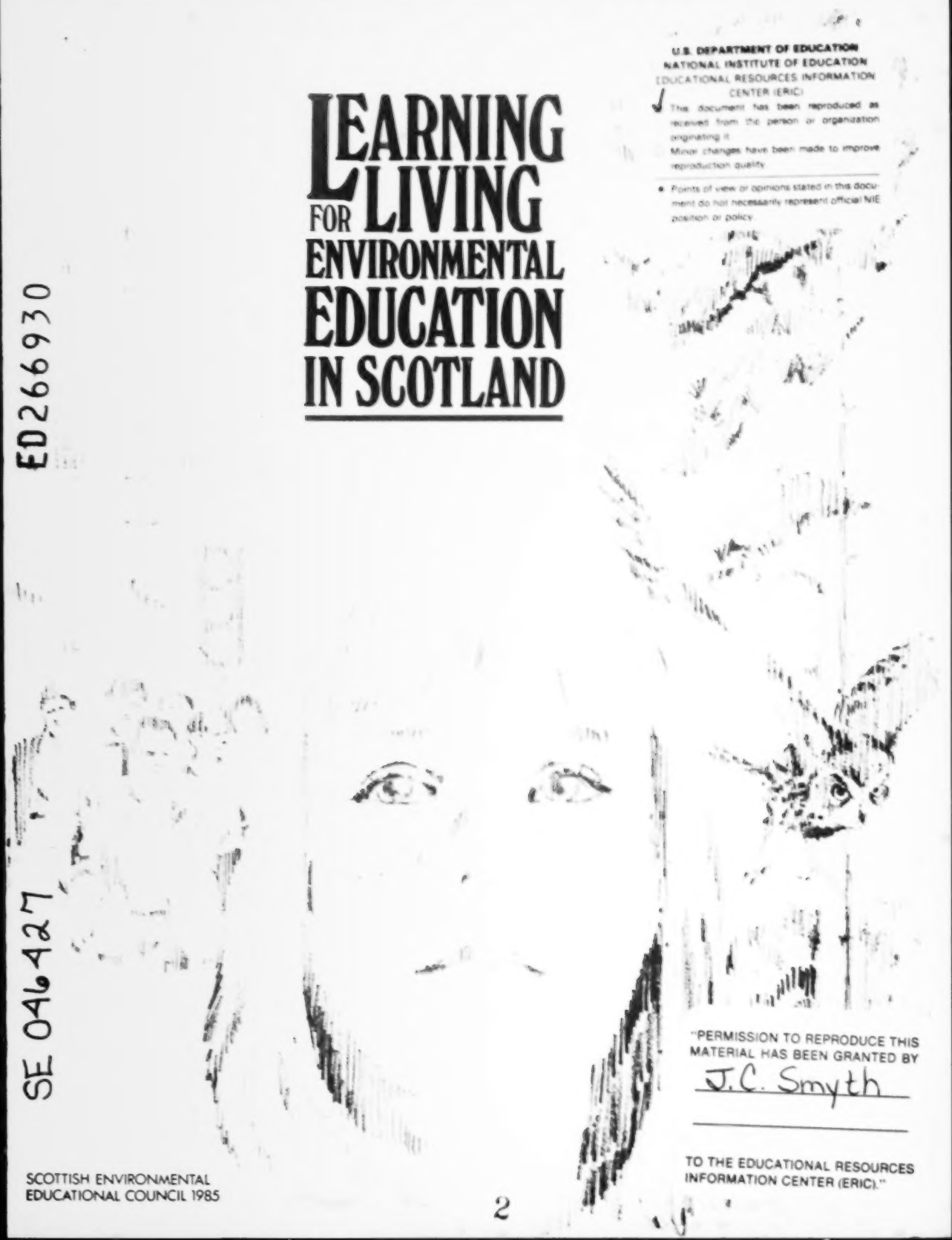

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SCOTTISH ENVIRONMENTAL EDUCATIONAL COUNCIL 1985

LEARNING FOR LIVING

ENVIRONMENTAL EDUCATION IN SCOTLAND

Edited by J. C. Smyth for

THE SCOTTISH ENVIRONMENTAL EDUCATION COUNCIL

1985

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ABOUT THIS BOOK

This Report has been prepared at the request of the Scottish Environmental Education Council to provide a review of progress in the development of Environmental Education in Scotland over the last ten years. It is addressed to all who are concerned in the planning, direction or conduct of education whether in the formal system or informally, and for whatever age group. It assumes a willingness to agree that an understanding of the environment in which we live is as important as an understanding of ourselves and our cultures, and that the health of our environment is inseparable from our own. It commemorates the publication in 1974 of a government report which did much to alert educators to the importance of this message.

The Report has been assembled by a committee consisting of Jean Forbes, Frances Noble, Ian Pascoe, Alastair Robinson and John Smyth, the last-named also acting as editor.

This committee is indebted to many who have provided written material, information, technical support and advice, including: Don Aldridge, Ann Allan, John Baines, Ian Barr, David Budge, Dick Butler, Frank Crawford, David Curtis, Sadie Douglas, Aileen Duncan, Margaret Fraser, Ruth Grant, Bill Hall, Moira Laing, Ian Lawson, Marista Leishman, John Logan, Jim McCarthy, Ian McKellar, Bill McPherson, Don Martin, Tom Masterton, Jim Milligan, Paul Mills, Alasdair Nicolson, Bob O'Brien, David Primrose, Fred Randall, Bob Rowatt, Steve Sterling, Dan Taylor, Bill Thomson, Ann Watters, Roger Wheater, together with the representatives of various organizations of different kinds. Much condensation and interpretation have been required, however, and final responsibility for what appears lies with the editor.

The committee was particularly pleased when Dr. John Gilbert, whose name appears many times in these pages, agreed to write a Foreword, and is grateful to him for doing so.

A special debt of thanks is due to Eleanor Webster who has spent many long hours at a word processor and without whom the diversity of material could never have reached a state of order. We are also indebted to the Educational Development Unit of Paisley College for design and lay-out of the final publication.

In a report of this length justice could not have been done to the work of all the groups and individuals who have been active in Scottish Environmental Education over these last years. The committee earnestly hopes that those whose work has not been mentioned will not feel themselves any less a part of the growing band of environmental educators. In many schools, local authorities, colleges, voluntary organizations and elsewhere there are enthusiastic individuals and groups unacknowledged but hard at work, whose efforts have made possible what we record. We hope this report will help to bring them support.

The Scottish Environmental Education Council recalls with gratitude and affection two of its founder members, the late Stanley Skillen and the late Russell Thomson, who did so much to influence the work recorded here.

FOREWORD

Change in our environment is inevitable, change through natural agencies and human activities. In the twentieth century, especially during the last ten years, the extent and speed of change have greatly increased. Alongside this constantly changing scene our approach to environmental problems, the growth of more positive attitudes towards our environment and "a care and a concern for the 'things', animate and inanimate, human and natural, that exist on earth" have also changed, albeit sometimes too slowly. Therein lies the raison d'etre of the Council's report. In a reasoned and sympathetic way the report enlarges on such changes and emphasises the importance of "the creation of a constructively critical public" through a "balanced educational policy". It is a valuable and timely statement of what has been and of what has not been done during the last ten years. The Council's exhortation to see beyond local horizons, to visualise the national, international and global implications without neglecting the undoubted delights and cultural pleasures of Environmental Education must surely lead to its occupying a much more prominent place in the educational pattern of the next ten years.

Environmental Education is neither the prerogative of any subject or group of subjects nor is it confined to one educational level. Co-ordination of effort across disciplines and between all ages is essential. This the report rightly stresses. Due prominence is also given to the need for a central resource-base where "internal conceptual structure" could be developed with "clearly defined aims and objectives" and progress assessed. The Council very wisely and opportunely has cast a wider net than did the 1974 report and like it recognises that environmental interpretation is personal to one's background and interests. It is the common core which unites that is valuable.

It has been a particular pleasure for me to write this foreword and to learn how Environmental Education has advanced since 1974. The Council is to be congratulated on the thoroughness and vision of its report. There is no doubt in my mind that Environmental Education structured along the lines set forth in the Council's report would provide a sound framework on which to build a positive response to the environmental challenges of to-day.

JOHN GILBERT

Melrose, 1985.

CHAPTER 1

THE CHANGING ENVIRONMENT OF ENVIRONMENTALISM

Scotland might fairly claim to be the home of Environmental Education. Certainly it was the home of Sir Patrick Geddes (1854 - 1932), biologist, pioneer town planner and educator extraordinary whom many would regard as the father of Environmental Education. He stressed the importance of multidisciplinarity, of synopsis and synthesis, and made plain in many ways that the quality of our environment will surely reflect the quality of ourselves. Many of his ideas were far ahead of their time and some are ahead yet. But what has happened in Scotland to this fundamental message for educators? Only in the last thirty or so years, as environmental challenges have grown too great to be ignored, have people seriously questioned the effectiveness of traditional education as a means of developing environmental competence. Only in the last ten years have we had a government publication to guide us. The purpose of this report is to review what has happened during these ten years, and to point directions for the next ten.

Gilbert plus Ten

Near the end of 1974 a report by HM Inspectors of Schools entitled 'Environmental Education' was published by HMSO on behalf of the Scottish Education Department[62]. It has since come to be known more simply as the Gilbert Report after its main begetter Dr. John Gilbert, then HM Chief Inspector of Schools. When it was launched at Battleby, the headquarters of the Countryside Commission for Scotland, it was revealed as a major statement of the need for Environmental Education, its nature and the manner in which it could be developed in Scottish schools. It was welcomed by many as an important marker of progress, a commitment by the Inspectorate from which it would be difficult to fall back. Praise for it came not only from within Scotland but also from south of the border, where it was felt to be ahead of anything so far achieved there.

Following such success one might inquire why Environmental Education is not now a much stronger element in Scottish education. The explanations are probably various. It was launched at a time of change in the structure of both Scottish local government and Scottish education, when the Munn and Dunning Committees' reports were in preparation, [64] [63] and the future in many respects too uncertain for any new commitment of resources to a specific innovation. Other pressure groups for interdisciplinary topics were also in the field and to some extent in competition, for example Education for the Industrial Society. Combine these with the innate Scottish caution about meddling with curriculum content and we can probably explain the relegation of the Gilbert Report to 'something on which immediate action is not required'. On the other hand it stimulated many unofficial initiatives, by groups of enthusiasts determined to keep the issue alive. Some of these are described in the chapters that follow and the efforts have not been in vain. The processes of change which first held back development have led to opportunities which are ripe for exploitation, and for which much preparation has been done.

The 1974 Report was conceived and prepared during a period of rapidly growing public awareness that all was not well with our environment, when words like 'pollution' and 'ecology' were entering everyday speech (not always correctly applied), when population explosions took their place beside nuclear ones as

potentials for disaster, and when the finite nature of our resources was being dramatically brought home by space photography of the planet Earth. The pronouncements of 'experts' were split between those assuring us of technological 'fixes' and those prophesying doom. By all of this the public was confused and probably still is.

International and national recognition of environmental problems took the form of meetings, reports and a few government initiatives which were summarized in the 1974 report, as were the parallel attempts, internationally and nationally, to define and establish the status of Environmental Education. Backing all this was a swelling flood of popular and semi-popular literature and the growing interest of press, radio and especially television.

This progress has continued. An International Workshop on Environmental Education at Belgrade in 1975,[78] which produced the 'Belgrade Charter', was followed by a regional meeting of experts at Helsinki and an inter-governmental conference at Tbilisi in 1977.[79] These set out guidelines for educational programmes on a global scale (see p.57) and stimulated a succession of non-governmental conferences in London (1977), Arlon (1979), Bern (1980) and elsewhere, which carried the debate to practitioners in the field. In 1980 publication of the World Conservation Strategy (WCS) by the International Union for the Conservation of Nature and Natural Resources (IUCN),[40] in collaboration with other international agencies, set out the need for conservation of resources alongside the need for sustainable development (see p.54). This was an important move in a world made increasingly conscious of overpopulation, resource depletion, poverty and starvation by the Brandt Report (1980)[11] and the Global 2000 Report to the President of the USA (also 1980).[38] Educational implications of these, and especially of the UK national response to WCS published in 1983,[77] have presented environmental educators with a wealth of material on which to work. Fortunately the long period during which education was simply exhorted to do something, without much help as to what, seems to be giving way to a phase of more practical consideration of how progress can be made; but much remains to be done.

In Scotland the Committee on Education and the Countryside which helped to provide the background for the Gilbert Report was wound up in 1975 leaving a gap which was to some extent filled in 1977 by the formation of the Scottish Environmental Education Committee (SEEC) under the chairmanship of Dr. A. E. Ritchie. This committee functioned without staff or any significant budget through the goodwill of the Scottish Civic Trust,[56] which provided secretarial services, and the support of assessors from the SED and the major Scottish conservation organizations. It has been responsible for annual conferences on Environmental Education and has supported a number of other initiatives. In 1984 it adopted a formal constitution, altering its name from 'committee' to 'council', and embarked on a programme of development.[67]

From its early years SEEC received help and encouragement from the Council for Environmental Education (CEE), based in Reading, which has a leading role in promoting Environmental Education in the rest of the UK.[18] In 1983 a UK Environmental Education Information Management Project (UKEEIMP) was set up jointly, to develop the CEE information base for wider use. In Scotland this led to the establishment of the Scottish Environmental Information Network for Education (SEINE, see p.72). Collaboration with CEE on publications and other common concerns is also increasing.

In the meantime changes were taking place in the formal sector. The Munn and Dunning Reports were translated into programmes of action, a new programme launched for the over 16s, and other innovative projects started in which Environmental Education still has opportunities to become a major influence. These are referred to in later chapters.

With so much discussion of Environmental Education over these past ten years it is salutary to re-read the Gilbert Report and find how much was already there:

— The Report treated Environmental Education as a whole and not merely the sum of its parts, seeing it permeating the whole curriculum, not as a separate subject.

— It identified empirical, synoptic, aesthetic and ethical elements and showed how these may be developed through all the stages of education and different curricular subjects, urging a co-ordinated total programme extending into informal education and later life.

— It recommended practice in making value judgements, in decision-making and in critical assessment of views on current issues, and commended opportunities for personal involvement.

— It listed the different kinds of resources then available and recommended the development of resource centres in schools and on a communal or regional basis.

— It recommended first-hand experience of both local and distant environments and the availability of a variety of these through developments of day and residential centres and arrangement of access agreements.

— It saw education contributing to realisation of a personal, communal, national and international ethic, based on understanding and appreciation of the quality of one's own environment and that of others.

It is a tribute to the strength and far-sightedness of the report that these recommendations remain as valid as ever in a context which is changing fast.

Ten years of change in the Scottish context

Environmental Education, if it is to mean anything, must be responsive to the changing environment in which it is provided and received. The environment of environmentalism in Scotland has changed radically since 1974. Social, economic and political influences on the physical environment have been more clearly perceived. Environmental planning has become engaged as much in the 70s with promotion at local level of social and economic developments as it was in the 60s with physical renewal of obsolescent city fabric. It is important to consider the implications of these changes for Environmental Education.

(a) Economic trends and their impacts

Scotland has had to contend with three economic trends which have operated in different directions. Firstly traditional industries have declined and disappeared, leaving accelerating unemployment in the former industrial heartland of the Central Belt, and especially in the Glasgow conurbation. Some will argue that this has

propelled Scotland, faster than elsewhere, into exploring the post-industrial society and into the modern high-technology industries. The cost in wasted manpower has been great and the consequent widespread family poverty is an underlying cause of many social and physical environmental problems.

Secondly, against this gloom, the developing North Sea Oil industry has accelerated the rising prosperity of the North-East. The whole panoply of economic activity arising from the landing, processing and onward marketing of oil has given rise to clusters of new technological competences. At the same time it has raised issues concerning impact on the physical environment which have led to public clashes of interest, e.g. at Mossmorran in Fife where the application to build a petrochemical plant was supported by those pursuing economic objectives and opposed by those who felt their personal environment was endangered (both in terms of actual physical danger and on aesthetic grounds).

Thirdly, aside from the problems of unemployment, the nature of employment itself has changed. The balance in Scotland (as elsewhere) has shifted steadily from manufacturing towards service industries, leaving some confusion about what 'industrial training' should now mean. There are also more women in all kinds of employment, a trend likely to continue.

The Scottish Development Agency (1976) and the Highlands and Islands Development Board (1965) have taken an active promotional role in fostering employment growth. The SDA was given an additional role of co-ordinating and partly funding special urban renewal projects in former depressed areas. The GEAR scheme in Glasgow transformed the physical environment there, through programmes of house and factory building, but it also acted on the less visible social and economic environments through improvement of living conditions and the related fostering of community self-respect. Similar schemes have followed, for example in Motherwell, Leith and Dundee, where SDA has acted, as in GEAR, in concert with the Regional and District councils. This style of working — the area initiative — has made familiar the idea of positive discrimination by area, in terms of resource allocation and the consequent rapid change in certain visible environments.

Alongside the job-fostering activities of agencies like the SDA and the local authorities, there has been a growth of small scale locally-based attempts to generate small business activity. The Ardrossan, Saltcoats, Stevenston Enterprise Trust (ASSET) is one example. The self-help approach occurs widely, where groups of enthusiasts create work for local people providing services and repairs which localities may lack. Provanhall Holdings in Easterhouse, Glasgow, is an example which has contributed to the gradual recovery of some local sense of community in a huge housing estate.

(b) Social changes and their environmental effects

The single most important social change is in the population structure. Throughout Scotland the balance is tilting markedly away from the school age groups, as shown by dropping school rolls. In terms of educational need, the post-school age groups are now numerically very significant and, at the very least, this indicates that urgent attention should be given to the re-thinking of post-school education as a single entity. In addition the speed of surrounding change calls attention to the need to structure the delivery of the education service so that people may have recurrent access to it throughout their lives.

The degree to which the post-school generation finds itself stranded, without the level of education that society now expects, is exemplified by a statistic from a sample household survey done in the GEAR area of Glasgow in 1982.[35] Here 70% of all persons interviewed had no 'qualifications' of any kind. Such a figure raises questions not just about the organization of education and the curriculum which schools teach, but also about the appropriateness of our traditional exam-based systems of labelling people as they pass onwards into the working age group. (The possible changes in these circumstances which may flow from the new assessment systems have yet to show themselves).

The spread of television and the development of the communications media in general have created whole new ranges of expectations in most citizens. The disparity between the observed world of the 'haves' (as seen on TV) and the known world of one's own 'have not' lifestyle cannot but be a source of social stress in many of our towns. The aspirations of everyone are constantly being prodded upwards and are expressed in levels of expectation in housing design, shopping quality and availability of leisure facilities. Responses by public authorities to these rising expectations (which nearly always imply demands for more space per activity) have contributed markedly to the changing visible landscape.

The rise in unemployment has caused urgent reappraisals of many public policies, not least educational ones. Unemployment in the 1980s has two particularly worrying aspects. First it falls heavily on the young person, leading large numbers into a limbo where they have never had a job and where, with each day that passes, the prospect of ever getting one recedes. The other aspect is that unemployment has now reached into white collar and professional fields: not only our manufacturing sector appears out of date but our managerial and academic sectors as well.

Those in work are becoming sufficiently better off to buy increased mobility. This can lead to greater use of one's own city (and thus extend demands upon services of all kinds). Expeditions now extend into remoter parts of Scotland and into the rural culture and environment, a trend to which both statutory and voluntary bodies concerned with the countryside must increasingly respond.

(c) Political & administrative trends

Much environmental change is initiated and guided by the flow of public policies. These are the outcomes of politics — both Party Politics (Capital P) giving changing ideological casts to whole bodies of policy, and small scale but pervasive politics (small p) played out in the clash of interest groups among citizens and technical administrators. The whole style of public administration in Scotland has been influenced by two factors:

(i) the rise of expectations, indeed obligations, to develop public participation; and

(ii) the reform of Scottish local government in 1974-75 into two tiers of administration with the related adoption of new organizational structures for 'corporate' management.

Both of these have worked forward through the 1970s towards a possible convergence in the 1980s upon the idea of 'Area Management'. This can be viewed

narrowly, as just another way of organizing technical officers in local authorities, so that cross-disciplinary teams study geographic localities rather than disciplinary teams studying their parent topics region-wide. If the officers continue to sit in city centre offices where does participation come in? It does not come in if indeed the area teams remain remote. However, some local authorities are experimenting with cross-disciplinary teams establishing working relationships with local people in their home areas. We may yet see such teams physically present every day in local offices. Such an outcome would transform the possibilities for real participation because it would facilitate the long-running 'conversation' between citizens and professionals without which participation disintegrates into a sporadic complaints procedure and an 'us and them' tension.

A full convergence of cross-disciplinary, decentralized administration with measures to enhance local peoples' confidence and capability provides a valuable paradigm for structuring ideas about post-school education in general and local Environmental Education in particular. Education is a key service in any administration, and the use of one's locality as a basis of learning is a long step towards acquiring the capability to get involved in policy making for the locality.

(d) The Physical Environment

Many aspects of physical change have already been touched upon as it is now fairly clear that there is a tight circle of cause and effect between social and economic trends, policies for guidance thereof, technological advances and visible impacts on the world about us. This may be spectacularly seen in the great urban renewal activities (and the associated New Town growth) in Scotland's major cities. It is also visible in the grass-grown slipways along the Clyde, and the derelict sites which were formerly steelworks or collieries. Administrative errors in projecting technological trends are also visible in the now abandoned oil-rig construction sites on the Scottish coastline. But it is also technology, combined with economics and politics, which has cleared the air of pollution and stimulated the eye-catching cleaning of tenement stonework.

The rural scene also has been much influenced by political and economic decisions, whether by the construction of coastal power stations and oil terminals, by yellow fields of oil-seed rape or the tide of exotic conifers rising over heather-clad hillside changing both landscape and wildlife. Environmentalists are now drawing attention to less visible aspects of the pursuit of narrowly economic goals. Acid deposition and its effects have been widely publicised, but the run-off into watercourses of agricultural chemicals may be as sinister. Beyond that the hazards of nuclear energy production and waste disposal hover alarmingly on the edges of most people's understanding. On a wider scale lie global problems of the attrition of ecological life-support systems and of genetic diversity, brought home by haunting reminders of gathering disaster in television pictures from the Third World. Unfortunately the links between cause and effect are rarely made clear enough.

It is within the physical environment that social, economic and political processes converge and become visible in the use or misuse of land whether rural or urban. Deterioration of the visible environment has alerted public consciousness to the man-made processes which have led to it and which, thereby, threaten our collective future. Environmental Education must now include study of these processes within any study of a local area, and endeavour to link them to progressively larger and less familiar systems of which they are a part.

What follows

In the pages which follow we first review the developments in Environmental Education that have taken place, during these ten years of change, in primary and secondary schools (Chapters 2 and 3). In the more diverse patterns of activity that succeed school and extend into adult life we find that, although there has been change, there has been little in the way of Environmental Education. Chapter 4 therefore tends to look forward, identifying needs still unsatisfied and suggesting ways of meeting them. In the next chapters we look again at some of the organizations which contribute to education from outside the formal sector (Chapter 5) and at the national and international dimensions of Environmental Education (Chapter 6). We conclude with recommendations for the guidance of development through the next ten years (Chapters 7 and 8).

CHAPTER 2

THE PRIMARY SCHOOL EXPERIENCE

Environmental studies became a recommended part of the primary school curriculum following the publication of the Primary Memorandum in 1965.[61] Its central message, that education should be based on the needs and interests of children and on the 'nature of the world' in which they grow up, was intended to shift teachers' focus of attention away from the subjects they taught and onto the children they were teaching. One of its recommendations, therefore, was that an integrated approach to subjects such as Arithmetic, History, Geography and Science should be adopted, especially at the early stages, under the title of Environmental Studies.

The reponses of teachers and schools to that policy statement were very mixed. Some teachers, especially those concerned with the early years, were already working an integrated day while others were attempting an integrated approach through 'centres of interest' or project work. Many may have been inspired by the Primary Memorandum to change their ways of working but the majority of teachers continued to practise traditional methods, with a traditional orientation towards content knowledge.

It was against this background that the Gilbert Report was published in 1974.[62] It cited instances of work in primary schools where not only was an integrated approach to subjects being practised but where teachers were also engaged in integrating children's experiences, both curricular and extra-curricular, through recreational and social links with the rest of the community. Both the physical and the social environments were being used as learning resources. Nature trails were being undertaken and town trails designed. As a follow-up to these first-hand experiences, opportunities for creative work were provided.

Gilbert's position differed from that of the Primary Memorandum in maintaining that our responsibilities to others and to the world in which we live are of equal importance to our own needs and interests as individuals. This wider vision of engendering in children an environmental ethic, at individual, community, national and international levels, is reflected in the title given to the Report: 'Environmental Education'.

The Gilbert Report advocated a continuity of 'ideas, principles and aims' in Environmental Education throughout the compulsory curriculum and beyond. Implicit, however, in such a continuity between the primary, secondary and tertiary sectors of education is continuity within each sector.

Much has been done over the last decade to agree the areas in which continuity should be developed and also to establish how such continuity is to be attained over the age range involved. Individual teachers and schools have developed their own programmes of work in which conservation and stewardship feature strongly and in which progressions of fieldwork and mapwork are identified. Current research has established sound practical guidelines for skills development in Environmental Studies; regional working parties have tried to present helpful, workable guidelines for teachers; the Scottish Committee on Environmental Studies has been actively seeking a consensus on which ideas, principles and aims to adopt in much the same way as has been done for other areas of the curriculum. But it is also true that

Gilbert's recommendations have not yet been implemented throughout the primary school sector. Some of the complex of factors contributing to this appear to be lack of resources due to financial constraints, a low level of imagination in some members of the profession, an unhelpful management, the entrenched power of some subject specialisms, a perceived lack of specific guidance from the 'top' and poor channels of communication.

When one considers that only ten years have passed and that the ideas in the Gilbert Report are by no means the only novel curricular ideas being discussed and developed, then the achievements during that time can be viewed more optimistically. The momentum of change in our environment and the levels of information now available to us are such that we can no longer simply study it in a value-free way. We must all learn how to use new methods of processing information and how to manage change, and this will require time: time for promotion, time for reflection, time for action.

The radical nature of these changes in the skills required to function as an adult in our society may in the end be the major reason why, as yet, the Gilbert Report's recommendations have failed to become 'ideas in good currency'. What is required is nothing less than a major shift on the part of the profession, from passive learning about the world to active inquiry methods which use both the physical and social environments as resources for learning, and which foster the conservation of our natural world as well as seeking to improve the quality of our lives.

The size of the problem can be gauged from the findings of a survey carried out by HM Inspectors of Schools in 152 schools, 'Learning and Teaching in Primary 4 and Primary 7' (1980).[65]

> 'Two out of five P4 teachers and half the teachers at P7 gave Environmental Studies an important place in the curriculum. Almost all the outstanding work seen by HM Inspectors during the Survey was due to the efforts of teachers in these groups. At the other extreme so little time was given to Environmental Studies by one in five P4 teachers and one in ten P7 teachers that no judgement about their work could be made.'

When they examined what was actually being taught and how it was being taught, they found that:

> 'In 90 per cent of P4 classes and nearly 75 per cent of P7 classes teachers gave priority to the transmission of knowledge and facts'

and that:

> 'Half the P4 classes and 40 per cent of the P7 classes were taught by class lessons with the aid of textbooks and dictated notes.'

An assessment of how the primary school sector is changing and how some of the resulting problems are being tackled, can be made by examining, firstly, the initiatives taken by policy makers and their effects; secondly, the main issues currently being debated in Environmental Studies; and finally, some examples of the study of the environment both in and out of the classroom.

Initiatives

In the last ten years there have been many initiatives relating to policy-making for Environmental Studies in the primary school, from the national level as part of the work of the Consultative Committee on the Curriculum (CCC), through regional Environmental Studies working parties, to the work of individual schools seeking to clarify and set down principles and practices for their own staffs.

(a) National

The CCC advises the Secretary of State for Scotland on educational matters in schools. Its sub-committee on primary education (COPE) was responsible in 1976 for setting up the Scottish Committee on Environmental Studies in the Primary School (SCES).

SCES had a number of remits, one of which resulted in the publication in 1981 of a document entitled 'Environmental Studies in the Primary School — the Development of a Policy'[57] which endorsed the principles of Environmental Studies set out in the Primary Memorandum. However, while it welcomed the fact that these principles appeared to have had 'a good influence on teachers, on pupil-teacher relationships and on the broad educational advancement of pupils', it was forced to conclude: 'the practice of Environmental Studies in schools has been haphazard, inefficient, unstructured and lacking in real commitment'. The SCES document was intended to provide teachers with a rationale for Environmental Studies. Schools were able to begin structuring their work around sets of concepts and skills thought to be central to a study of the environment, and to plan development through the different stages of the primary school. The concepts chosen were adaptation, cause/consequence, change/stability, conservation, evidence, independence/interdependence, location, similarity/difference and time. To study these ideas effectively children must learn about researching, recording, interpreting experiences, experiencing and feeling, relationships and positive attitudes.

The document also provided exemplar studies showing how these concepts and skills could be applied to a number of environmental study topics, for example 'Me and My Family', 'A Local Water Study', 'Farming' and 'Scotland in the Time of Wallace and Bruce'.

The intention of the SCES document was to provide schools with a base line from which to plan an Environmental Studies programme. The move away from a content approach to one which focuses on concepts and skills has proved challenging for schools and some Regional Authorities have produced their own guidelines, a course of action recommended by SCES.

(b) Regional and divisional

The SCES paper was anticipated by the work of Lothian Region Environmental Studies Committee which published in 1977 its 'Sub-Committee Report on Environmental Studies'.[44] The Lothian Guidelines Paper asks schools to write their own policy documents and programmes using the following concepts: causes, consequences, similarities, differences, interdependence, continuity and change, and it also advises very strongly the fullest use of the local area and field sites in the

Region as resources and gives advice on some aspects of resource production.

In 1982 Fife Regional Council Education Committee published guidelines[28] using the SCES concepts and skills 'to ensure a degree of uniformity in the approach to the teaching' of Environmental Studies in its primary schools. Out of the five hours allotted per week, schools are asked to follow a prescribed programme for half of the time, while teachers can pursue their own chosen topics for the other half. The major part of the guidelines consists of detailed exemplars of the prescriptive P1-3 and P4-7 programmes. In addition, there are sections on evaluation and planning, examples of a progression in the use of evidence and mapping skills, suggestions for fieldwork and a school policy for science.

As to the nature of the work undertaken, the emphasis is on 'pupils observing and doing things for themselves both inside and outside the classroom'. To assist teachers a Resource Production Committee is preparing resource packs to support the local study component of the guidelines, a headteacher has been seconded for three years to promote the development of Environmental Studies in schools and two-day seminars on Environmental Studies are planned for every headteacher and assistant headteacher in the Region.

Argyll and Bute Division of Strathclyde Region has also produced guidelines.[5] It too has chosen to use the set of SCES skill areas but a different set of basic concepts: contrasts, change, location, interdependence, society and technology.

Based on the traditional subject areas of Local Studies, History, Geography, Science and Health, the programme for Primaries 3 - 7 incorporates the following components:

— the study of spaces of increasing size and complexity

— intensive study of a number of historical patches

— study of the recent past

— science/health aspects

— studies of foreign contrasting environments.

Teachers are encouraged to develop other areas of the curriculum through Environmental Studies, Language, Mathematics, Arts and Craft.

(c) Local and individual

There are also cases of co-operative action at local level. In some instances these are aided by larger projects such as the Geography 10-14 project organized by Moray House College of Education from 1975-1979. This led to the identification of nests of schools and the exchange of ideas and information between them. Most nests consisted of a group of primary schools and their local secondary school. Another local stimulus developed in Glasgow when GEE-UP (Glasgow Environmental Education Urban Projects)[34] was set up in 1978 to encourage schools' involvement with practical conservation work. Its committee includes teachers, advisers and representatives of interested organizations such as the planning department, parks department, Scottish Conservation Projects and Scottish Civic Trust, and gives advice and help on obtaining funds, tools, planning permission, insurance etc. It also organizes courses for teachers at Faskally

Outdoor Centre. More recently, a group of schools in and around Whitburn has arrived at a common curriculum and has been developing a joint approach to creating and gathering resources.[63]

(d) SED

The impetus for curriculum development fostered by the SCES document has recently been reinforced by a major SED initiative. A Primary Education Development Project to study and test new methods of teaching and learning in the primary school has been launched. Planned to last five years, it will build on children's natural interest in the world in which they live and about which they are always learning. Environmental Studies will be of central importance in the Project but it will also incorporate a scientific approach to learning and give relevance to the development of the basic skills of language and mathematics. In support of the Development Project, a paper entitled 'Learning and Teaching: the Environment and the Primary School Curriculum' has been published by HM Inspectors (1984).[66] In it the environment is seen as central to the primary curriculum:

> 'The environment is something to learn FROM, learn ABOUT, and be responsive TO. Because the environment is inescapable it is difficult to exclude any aspect of the learning process or of the curriculum from the comprehensiveness of this definition'.

In a full analysis of the place of the environment in all of the traditional subject areas, it concludes that even in Religious Education questions of moral responsibility relating to our stewardship of the environment should arise, leading to a 'development of respect for other forms of life and of a sensitivity to their welfare and needs'. It is therefore a matter of regret that the paper did not stress, in the statement quoted above, that environmental work should also be FOR the environment.

Issues

(a) Composition of Environmental Studies

Environmental Studies in the primary school curriculum has always attracted controversy. How should it be defined? How does it relate to the other major areas of Mathematics and Language? Is it a matter of adding Geography to History to Science to Health and studying the composite in topics or projects? Is it synonymous with Local Studies? Is it a short list of concepts and skills devoid of context or content? Or is Environmental Studies, in the words of one senior teacher, 'What I do'?

The COPE Position Paper, 'Primary Education in the Eighties' (1983)[17] says:

> 'Many teachers have a narrow and subject-centred view of Environmental Studies and put undue emphasis on the memorisation of facts at the expense of first-hand experience and the development of understanding'.

This, however, may be more a criticism of teachers' interpretations of subjects than of subjects as such, many of which are concerned with increasing our understanding of the world, and at least some of which draw heavily upon first-hand experience. What is of concern is the quality of children's experience and the development of their understanding. Children should be encouraged to base their

studies on what is around them, what interests and motivates them, what leads to worthwhile understanding of the wider world — nature, community, society — and what fosters in them a care for and a concern for the 'things', animate and inanimate, human and non-human that exist on Earth.

The techniques, skills, knowledge and resources of all subject areas are available for use as deemed appropriate in every child's Environmental Education. It is also arguable that these concerns should apply to all the other curricular areas of the primary school. This would, of course, be the ultimate expression of the child-centred approach. The SCES document takes the view that:

> 'When one considers, not only the opportunities that environmental studies provide for realistic and relevant work in language, mathematics, and expressive arts, but also the many incidental day-to-day opportunities for the discussion of matters affecting behaviour, relationships, health habits, it is arguable that environmental studies should of necessity comprise the major part of the child's school life'.[57]

(b) Priorities

A second set of issues to do with perceived priorities has also emerged. Which ideas or concepts should receive priority? Which skills should be enhanced? And even, within an integrationist philosophy, which subjects should be strengthened?

A current concern, for example, is the role and significance of Science in Environmental Studies. The HM Inspectors' report, 'Learning and Teaching in Primary 4 and Primary 7'[65] concluded that 'as a matter of priority, something has to be done for (teachers) in Science'. The new Primary Education Development Project seeks to encourage the scientific approach to learning in the primary school. It concentrates on the skills of observation, experimentation, deduction and independent learning within the context of a growing appreciation of the impact of science and technology on our culture.

Another example of a priority issue is the identification of the concepts and skills central to Environmental Studies. The SCES document and the other guidelines provided lists of concepts to encourage teachers away from teaching only factual knowledge. However, much work still requires to be done to clarify and analyse specifically environmental constructs such as place, society, natural life, time, matter and materials, energy and forces. In addition, a case needs to be made for including such ideas as stewardship and conservation.

There is evidence that the pressures for additions and changes to the conceptual map of Environmental Studies will continue to increase. For example, the CCC has funded a development programme in International and Multicultural Education (IMEP) for the 9-14 age group. This group (with its own newsletter 'Connect!') aims to develop global literacy in young people so that they may begin to evaluate the significance of world events.[39]

The Programme has identified five major areas of study:

DEVELOPMENT EDUCATION focusing on interdependence and development,

ENVIRONMENTAL EDUCATION concentrating on the ecosystem and conservation,

HUMAN RIGHTS EDUCATION dealing with rights, justice and dignity,

MULTICULTURAL EDUCATION looking at culture and diversity,

PEACE EDUCATION concerning peace and conflict.

It is intended that children should encounter all five areas of study during the years P5 to S2. One of the outcomes will be identification of the stage at which these complex ideas can best be introduced.

Another related priority is the establishment of continuity in the development of pupils' skills in studying the environment. Again, the list proposed by SCES is insufficiently comprehensive. It could be argued that, for example, fieldwork skills, experimental and problem-solving skills, graphic, cartographic and library skills should be included. Alongside the conceptual analysis and identification of skills lies the work of relating the findings to environmental topics and themes used in schools and much more of this is needed.

(c) Teaching methods

The question of classroom practice leads to a third set of issues concerning teaching methods. It is arguable that the way in which children learn is as important as the understandings they gain. In the press release announcing the launch of the Primary Education Development Project, Allan Stewart MP, Minister for Industry and Education at the Scottish Office, said:

> 'In an increasingly technological world, fresh approaches to teaching and learning are necessary in primary schools: children are never too young to acquire the scientific approach to learning. They need to develop skills of observation, experimentation, deduction and independent learning at an early age. Much of this can be done through the children's natural interest in the world in which they live and about which they are always learning'.[70]

This is clear endorsement of the use of the environment as a resource for learning. It is to be hoped that the affective, aesthetic, conative and social aspects of the development of children will be seen to be as important as their cognitive development.

(d) Assessment

Finally the matter of assessment, particulary as it relates to teacher accountability and staff development, is currently receiving much attention. The SED has recently funded a major project to investigate the use of practical activities not only in the assessment of children's understanding and thinking but also as a means of evaluating teaching methods. In addition a development framework is being sought by which teachers can structure what children do in Environmental

Studies across the seven stages of the primary school.

For many teachers this represents a major shift; assessment for them is about marking children's answers right or wrong. The notion of using assessment to inform practice is still a new and somewhat threatening idea to them and they will require much support to acquire these new assessment techniques and translate them into more effective teaching practices.

Curriculum Development

The third broad area in which to look for evidence of the profession's response to the challenge of the Gilbert Report is that of resource provision and teaching approaches, a good example of which is the Science 5-13 materials.[5,6]

Of course, resources still require to be interpreted by teachers and translated into learning experiences. It is well recognised that teachers will perform this task with more enthusiasm if they themselves can add something of their own interest and experience. For example, within the extensive series 'Resources for Environmental Studies Teaching' produced by Moray House College of Education,[45] a teacher in Fife has designed and piloted a guide and resource pack for the study of 'Our Street'. It contains a rationale, a statement of objectives, a large collection of worksheets to use on local fieldwork together with resource sheets such as house style recognition keys and copyrighted poetry extracts, as well as numerous illustrations of pupils' work and suggestions for activities.

These are materials which are immediately available to teachers in the same school and in other schools in the immediate area. For other schools many of the ideas would, of course, require to be adapted to reflect the particular features of the local environment, thus giving a teacher the opportunity to use the materials creatively to meet the particular environmental educational needs of her own pupils. This series contains numerous other examples of staff making available to others their ideas and resources on a wide range of topics.

Developments in educational technology are also being exploited. For example a team from Jordanhill College of Education is assisting teachers to develop computer programmes to supplement the activities of a Topic Study based on the novel 'The Desperate Journey' by Kathleen Fidler. The story concerns a crofting family from Sutherland, the Murrays, who fall victim to the clearances and are forced to make a new life for themselves in Glasgow where the children find work in a weaving mill. Eventually, they seek a better life in the Red River Valley in Canada.

Sets of programmes have been developed around four areas. The first recreates a hillside where a croft house and fields are to be sited. Children can try placing them in different positions and get feedback on their choices. The second programme uses the three houses in which the Murrays lived, a croft house, a 'single end' and a log cabin. It allows children to investigate the similarities in the houses and the reasons for differences. A suite of programmes simulates a working day in the mill for the Murray children, starting with setting up the warp and weft for weaving tartan and going on to experience the frustrations of trying to meet a production target at machines which break down from time to time. Finally, census records are available for both the crofting community and two adjoining closes in the centre of Glasgow. By studying these, children can compare features of their own lives with those of the children in the two communities.

As these examples illustrate, there is no dearth of excellent ideas for learning opportunities both inside and outside the classroom and, as Gilbert found, there continue to be individual examples of good environmental educational practices. The major problem is their dissemination. A recent movement towards sharing resources and exchanging ideas between schools in the same area may prove significant in bringing teachers up to date with the changing needs of children.

The need for improvements in resources and greater awareness of those available in Scotland was recognized by the CCC and a joint undertaking between Aberdeen and Moray House Colleges of Education was set up as a two year project in January 1983, called Scottish Resources in Schools (SCOTRES).[71] Its remit was very wide, including literature and culture as well as the environment, and it has co-operated with SEEC in exchanging information with SEINE (see p.72). Two of its recommendations, for a national data-base and for a central co-ordinating agency, are particularly relevant and useful to Environmental Education.

The Future

There is little doubt that at the policy level major changes are taking place in the use of the environment as a resource. More than that, however, there seems to be a growing recognition of the scale of the changes in teaching methods that are required if primary children of today are to be equipped with knowledge and skills that will be of use in the 21st century. The movement towards learning how to learn has begun to roll and it seems unlikely to be halted.

SCES has recently produced a document called 'Policy into Practice'[58] which is designed to help schools to develop, implement and evaluate school policies for Environmental Studies. It poses many questions which members of staff have to attempt to answer in terms of their own school and its environment. It draws on examples of good practice and suggests ways of tackling the practical problems of managing change in the curriculum and in the classroom. It also encourages the exchange of ideas and the sharing of resources with other local primary schools and with their associated secondary school.

It would be naive to assume that an environmental ethic will automatically be fostered in children through new approaches to learning and it must be remembered that there are many influences on what and how children learn, experiences in the classroom being only one of them. In 'Primary Education in the Eighties'[17] COPE identified four modes of teaching: expository, discursive, inquiry and activity. At present the first two modes predominate in primary school classrooms, but if all become widely adopted there is a better chance that positive attitudes towards the environment will result. Also, the creation of links between schools and the communities they serve are being encouraged more than ever before, although it is acknowledged that it is not easy to accomplish.

Another factor which affects the outcome of curriculum innovation is the means by which it is managed. The Position Paper[17] in one of its key recommendations to local authorities urged them to provide 'a management structure in schools sufficient to encourage the kinds of curricular and professional thinking required, and afford staff time for the planning and preparation to take place'. Questions of the evaluation of school programmes also arise; much more work in now being done on methods of assessment including practical assessment of children's work both as a way of monitoring development and as a measure of the effectiveness of teaching.

The ideas in 'Policy into Practice'[58] should help schools deal with the management aspects of curriculum developments.

The major questions are finance and the length of time necessary to transform a largely traditional workforce into expert managers of learning resources. The task is enormous: according to one forecast it will take at least another ten years. Regional Authorities through their staff development programmes are giving consideration to Environmental Studies. Fife's programme has already been referred to and in Glasgow an active programme of primary/secondary liaison in Environmental Studies has been pursued over the last ten years.

But it has to be said that however well these initiatives and developments operate in the primary sector, if the hopes of the Gilbert Report are to be realised, that which the primary school begins must be taken up and developed by the secondary school. In 1982 the CCC launched an Education 10-14 programme to improve the transition between the two and a report of it is expected before the end of 1985. Much hope must be pinned on its success.

CHAPTER 3

THE SECONDARY SCHOOL EXPERIENCE

Introduction

The secondary school occupies the central position in the primary/post-school continuum and therefore Environmental Education must be seen as the continuation of basic work already done and the preparation for post-school education and experience. Since not all pupils continue their formal education beyond the secondary school, its work must also be capable of being seen as complete for such pupils. While Environmental Education, at least in the guise of Environmental Studies, is well established in primary schools, its development in secondary schools has been very uneven. One of the main purposes of this chapter is to identify some good environmental work being done in secondary schools. It would be impossible, however, to provide examples from all schools and groups involved in Environmental Education at secondary level, so perforce selection must be made. That does not imply that work done in institutions and groups not specifically mentioned is unimportant.

Early developments

Following publication of the Gilbert Report, in 1974, the first initiatives were taken mainly by enthusiastic individuals or informal groups. Some teachers and advisers seized on Environmental Education as an answer to their prayers for something new and interesting to offer pupils who had to stay an extra year at school when the school leaving age was raised to 16. Others adopted the primary school view that Environmental Education could be a useful vehicle from which to present a view of the world beyond the school more realistic than the usual fragmented curriculum could hope to offer.

Early developments in such schools as Craigroyston High School in Edinburgh, John Street Secondary School in Glasgow, Linlathen High School in Dundee, Inverurie Academy in Aberdeenshire and Williamwood High School in Renfrewshire pointed the way forward for many teachers. This pioneering work showed that consideration of the environment required the involvement of more than one department and support from senior staff at the school. The impetus to develop was usually provided by an enthusiastic teacher in one of the departments involved in environmental work. Usually the teacher held a promoted post, for example as Principal Teacher of a subject department, but instances of young, inexperienced teachers obtaining the co-operation of their senior colleagues are also known.

In the earliest days the departments most commonly active were those of Art and Geography, both of which saw their traditional role as environment observer/user being broadened by the Gilbert Report. Naturally some Art, Geography and other departments maintained that they had been 'doing' Environmental Education already, but few, if any, had been developing all four of Gilbert's elements - empirical, synoptic, aesthetic and ethical. In order to cover successfully all four, other departments increasingly became involved. Among these were the Sciences, Music, Home Economics, History and Modern Studies. In

some cases Drama played an important role, in others Religious Education led the way in the development of broadly interpreted environmental courses. No matter what departments became involved, the curriculum development work ensuing from the Gilbert Report encouraged interdisciplinary work — and thinking — to a far greater degree than ever before, convincing teachers (or those teachers who were willing to think about it) that it was possible — and helpful to pupils, who after all are more important — to work with others in developing and teaching courses in the later stages of the secondary school.

The main impetus in secondary Environmental Education has been at S3/4/5 level, but S1 and S2 cannot be ignored as important parts of the school continuum. Environmental work at this level remains more in the hands of individual departments. In subjects such as Geography and Science ideas of the importance of environmental awareness and appreciation are included within departmental syllabuses, but in some other subjects the importance of environmental work is yet to be recognised. There are, however, pressures to review both the organization and the teaching of the first two years of the secondary school with a view to reducing the number of teachers whom pupils meet during SI, to improve the co-ordination between subject departments and to improve liaison between primary and secondary schools. Environmental work may well benefit from these pressures and already a report by a joint primary and secondary working party on Primary/Secondary Liaison in Environmental Studies/Social Subjects has been published (1983).[42] The CCC[55] and a number of regions such as Fife (1984)[29] have published Curriculum Guidelines for S1/S2 Social Subjects and these acknowledge the importance of the environment.

Co-ordination and Training

Although much of the early work in Environmental Education was done by individuals and small groups, usually within a single school, as time went on local groups became established where teachers from a number of schools and other establishments came together to develop work in the Gilbert mode. As with much curriculum development, the initiators wanted to involve more people simultaneously, appreciating that there was limited purpose in everyone starting from the very beginning — 'reinventing the wheel'.

The co-ordination took many forms. In Tayside, for example, the Advisory Group for Environmental Education in Tayside (AGEET) was set up. This group produced the very valuable 'Tayside Environmental Resources Guide' (1980)[2] and has organized a series of annual conferences in Tayside. It has a membership drawn from a wide variety of local and national organizations. Also in Tayside, the Tayside Environmental Education Project (TEEP),[76] established in 1980 at Duncan of Jordanstone College of Art in the Department of Town and Regional Planning, is a good example of a resource centre funded on an annual basis through the Manpower Services Commission. It has run school competitions, produced educational materials and packages and provided other kinds of help to schools. Further examples of this kind of development are described in Chapter 5 (p.40).

The Strathclyde Environmental Education Group (SEEG) is a smaller and more informal group than AGEET. It was established in 1975, initially at Paisley College, as an informal group of teachers, university and college lecturers, inspectors and advisers, and devoted much of its energy to basic thinking about the structure of Environmental Education especially in secondary schools.[30] The SEEG definition of

aims is in the following terms:

> "Environmental Education aims to enable people to recognise the factors which determine the nature and quality of the human environment so that all may respect and appreciate it to the full, and participate constructively, as individuals and as citizens, in its management and development."

This statement has been adopted by other groups and organizations as a relatively tidy definition. SEEG expanded it into a set of four general objectives for an Environmental Education programme, as follows:

> "(i) To identify and observe more accurately the many components of our environment (observation, recognition and recording of system components);
>
> (ii) To understand the inter-relationships and interdependence between these components and ourselves (recognition of patterns and dynamics of systems);
>
> (iii) To evaluate the aims and environmental consequences of our own activities (assessment of different processes of change);
>
> (iv) To act, directly and indirectly, in a manner which will ensure the maintenance of a harmonious relationship between man and the world in which he lives (creative guidance of change)."

These, converted into five key questions (Fig. 3.1) formed the essential structure of the teaching model developed through teacher workshops and school trials and was considered applicable to any topic chosen for study. This scheme has been published by the Scottish Curriculum Development Service as an example of a model for treating environmental topics whether in an interdisciplinary or intradisciplinary framework.[74]

Stage	Question	Response
1	What does it look like?	Direct and Indirect observations made primarily on local material
2	How did it become like that?	Comparisons of observed and recorded data to introduce a timescale
3	How does it operate?	A study of inter-relations, processes and functions involving analysis and synthesis
4	How does it change?	An investigation of the reasons for present and past changes
5	How can change be guided?	An exercise in evaluating different kinds of change and exploring how to participate in determining change

Fig. 3.1. Strathclyde Model: Key Questions

SEEG also organized several conferences. One of them, in 1977, was mounted at Paisley College in collaboration with the Scottish Civic Trust and provided the platform from which SEEC was launched (see p.2).

Another Environmental Education group which existed for a number of years was based at Moray House College of Education and produced a newsletter 'Environmental Education in SE Scotland'. The group ceased to function because of other pressures but was replaced by an Environmental Development Unit at the College (see below).

The increasing interest in Environmental Education was recognised by Education Authorities. In some cases responsibility for the new development was simply added to the remit of an existing adviser but others such as The Borders, Dumfries and Galloway and Grampian Regions were able to make Environmental Education a major part of an adviser's remit. In these cases the adviser is able to co-ordinate and encourage environmental work through in-service training courses, conferences and publications. The Dumfries and Galloway Assistant Adviser in Outdoor Education, for example, is responsible for a useful periodical publication called 'Get Out'.[24] West Lothian Education Department has recently published a booklet of information and suggestions regarding local facilities,[82] which is a good example of another kind of publication service undertaken for environmental teaching by local authorities.

Environmental and Outdoor Education are closely related fields and Outdoor Education has been a great source of strength to work in the environment. It has led to the provision or adaptation of buildings for use as Outdoor Centres, both by Education Authorities and by individual secondary schools. These centres are usually designed to provide opportunities for a wide range of outdoor pursuits such as climbing, hill-walking, canoeing, sailing, ski-ing and orienteering. Some are also used for field studies in Biology, Geography or Art. Almost all of these activities have an element of Environmental Education in them. Outdoor work is particularly well developed in Lothian Region where many of the secondary schools have Principal Teachers or Assistant Principal Teachers of Outdoor Education. This has helped schools such as Craigshill High School, Tynecastle High School and James Gillespie's High School to organize residential outdoor experiences for all their pupils while many others arrange regular outdoor activities on a daily basis. Some of the larger education authority centres such as Ardroy (Fife), Lagganlia (Lothian) and Ardentinny (Strathclyde) have a range of well qualified permanent staff. Their main remit is to teach particular skills or field studies but they are inevitably drawn into environmental work, particularly the appreciation of the environment and what it can offer. Ballater Field Centre (Grampian) is exclusively concerned with environmental teaching and offers a year-round programme of field studies and environmental awareness activities to schools, teachers in in-service training and adult groups.

The colleges of education have also been active in Environmental Education, often in very different ways. At Moray House College of Education an ambitious two year part-time in-service training course leading to a Certificate in Environmental Education was held between 1980 and 1982. The college staff were drawn from the Biology, Geography, Management, Modern Studies, Outdoor Education and Visual Arts Departments. The course proved to be very valuable and highlighted many of the difficulties which teachers encounter when dealing with work out of school and work of a multidisciplinary, co-operatively taught nature. This pilot course could not be repeated due to problems over release of the teachers concerned and over the

staffing of the course, but in 1985 the Moray House Environmental Development Unit prepared for external validation a new course, planned to involve a range of interested professionals in addition to teachers. Environmental issues, taught in a multidisciplinary manner, also permeate several elements of the B.Ed. (CNAA) pre-service course.

At Jordanhill College of Education, environmental work has been promoted by the Jordanhill Environmental Education Group. The main instigator for the formation of this group was the late Russell Thomson of the Art Department who was an early pioneer in linking art and environmental issues. The group has a score of members from the Art and Geography departments and gets help from Science, English, Music and Modern Studies. It operates at three levels:

(i) Pre-service training through a student 'elective' course for graduates undertaking their post-graduate year of teacher training (mainly involving students from Art, Biology, Chemistry, Geography, Mathematics, Physics and Speech and Drama);

(ii) In-service training of teachers at weekends and during vacations;

(iii) School-focused In-service where groups of college lecturers go into schools to discuss programmes of Environmental Education and the contributions of the various subjects. They also take part in the teaching of the resulting course.

In 1977 a National In-service Training Course was held at Craiglockhart College of Education in Edinburgh on 'Geography and Environmental Education'. Part of the preparation for this course, the first to identify the need for Environmental Education to be part of a subject curriculum, included the creation of a group to prepare discussion papers as a starter for the course: the group was formed within the Scottish Association of Geography Teachers (SAGT)[54] and their paper 'Geography and Environmental Education' paved the way for further curriculum development in the environmental field. One important aspect of both the course and the SAGT paper is that both recognised the need and called for action to include subjects other than Geography in the Environmental Education work of schools.

An international stimulus to environmental work has been provided by the European Community Environmental Education Network, in which Scotland has been represented by Dyce Academy with the co-operation of Grampian Regional Council.[26] Links have been established with other network schools which have included an exchange visit for pupils and staff to the Highfields School, Hertfordshire, staff visits to Esbjerg in Denmark and elsewhere, and visits from teachers in other network schools. Activities in Aberdeen have included the establishment of a two and a half day residential programme of Environmental Education for all S1 pupils, the development of programmes of Environmental Education for several year groups and primary-secondary liaison in environmental work. The project has been sustained by substantial European funding. It is to be hoped that this programme will have more lasting effects than an earlier primary school project in which Scotland was also represented. European funding is given for the development of the project but its continuation and extension thereafter is a national responsibility. Without national support the benefits gained from the European connection may soon be dissipated.

Introducing Environmental Education into Secondary Schools

Before considering the problems of introducing new courses in Environmental Education, and the opportunities for its inclusion in the Standard Grade and other new courses already planned, it is worth recalling another possible approach already mentioned — to integrate Environmentl Education into existing SCE courses.[68] To ensure, however, that new work being incorporated is actually taught, it is necessary to inject certificate examination questions with items which relate to Environmental Education — for example, as the final 4 or 5 marks in a 25 mark question. One example of this which led to some publicity was part of a question in an 'O' Grade Geography paper on the Cairngorms area: pupils were asked to comment on suitability of the Lurcher's Gully for further winter sports development. The question evoked a letter in "The Glasgow Herald" from the Scottish Ski Council asking what right Geography teachers had to discuss such controversial matters with their pupils! (A reply was published showing the Scottish Ski Council the outdatedness of their opinions). As in Geography, so in other SCE courses, with Science pupils, for example, answering questions about the possible merits or otherwise of the use of more chemical fertilizers or pesticides, and Art papers relating design to the environment.

Three major reasons for the slow development of separate courses in Environmental Education can be distinguished:-

(a) Environmental Education sits (some would say uncomfortably, others unconformably) between the arts, the social sciences and the natural sciences. Traditional inter-departmental rivalries have resulted in squabbles as to who should take responsibility for Environmental Education rather than who should work together for Environmental Education.

(b) At the school management level the introduction of interdisciplinary work such as Environmental Education, with its implication of team teaching, can be seen as causing insurmountable headaches for timetabling, and therefore comes very low in timetablers' priorities. Environmental Education is seldom recognised as needing double or triple periods for outside work or the flexibility that more distant visits would require.

(c) Examination courses are seen as the be-all and end-all in some schools. Since Environmental Education is not an SCE subject it has been rated very low in terms of priority and, given the very short preparation time a teacher has, it usually remains at the bottom of the Prinicipal Teacher's 'in' or 'pending' tray. It is equally true that low priority is given to spending requisition money on equipment for Environmental Education: again, SCE courses take top priority. In spite of this, as the Gilbert Report demonstrated, much is possible to committed teachers.

Recent Curricular Developments

In 1977 the Munn Report[64] came out strongly in favour of a continuation of the existing subject-based curriculum and therefore did less than had been hoped to advance the cause of Environmental Education. The government accepted the main tenets of the Munn Report but also set up three multi-disciplinary courses. Two of these courses, Contemporary Social Studies and Social and Vocational Skills, are of particular interest for Environmental Education.

In the Contemporary Social Studies course there are three compulsory 'fields of

study' with a prescribed syllabus, one of which is called 'The Environment'. There are also three compulsory fields of study with no prescribed syllabus and two of these fields of study, 'Change in Society' and 'Contemporary Issues and Problems', could also provide a vehicle for much environmental work. In addition there are three optional modules to be designed and assessed in the schools and one or more of these could be environmentally based. The various possibilities in this course add up to a very significant opportunity for Environmental Education.

The three basic themes of the Social and Vocational Skills course, Home, Work and the Community, lend themselves very readily to the inclusion of an Environmental Education dimension: indeed without such a dimension, the course would be lacking an essential element. This course also strongly encourages teachers to give their pupils the opportunity to undertake practical work, fieldwork and a residential experience in, for example, an outdoor centre.

Standard grade courses on more traditional lines also involve Environmental Education. The Science course has adopted an environmental approach to science and has a compulsory section on Environments and Change. The Geography draft course has seven key concepts which are very reminiscent of a list of environmental concepts: interdependence, diversity, change, location, conflict and co-operation, empathy and the environmental ethic. History, particularly in its local studies section, Modern Studies, Art and Biology all also offer opportunities for Environmental Education.

In addition to these two year courses, a number of short courses of 40 hours duration have been developed. Some of these have been derived from the SEEG model (see p.20) and like other short courses are strongly based in the environment. Although the future of these courses is unclear, it is hoped that most schools will find a way of continuing to offer such very worthwhile experiences.

As part of the government's policy for improving the preparation of young people for work the Technical and Vocational Education Initiative (TVEI) was set up in 1983. Pilot projects are now being developed in Borders, Fife, Dumfries and Galloway, Renfrew and Glasgow. While these projects are primarily concerned with strengthening the pupils' Technical and Vocational Studies, they can also offer opportunities for Environmental Education, particularly where a period of residential experience is included. TVEI is aimed at pupils of all levels of ability and will become an option for large numbers of pupils between the ages of 14 and 18, as more projects become operational.

The SED's 'Action Plan' for the 16+ age group involves, among other changes, the introduction of a series of modules. At present the modules are derived from existing courses in FE colleges, but a greater variety of modules will be made available as the programme develops. Modules currently available include such titles as 'Environmental Studies in the Local Area', 'The Environment Primer', 'Trees in the Environment', 'The Local Environments' and 'Contemporary Issues'. It is known that additional modules are being devised in Grampian Region, Strathclyde Region and other parts of Scotland. There is a need for a rationalisation of the provision in Environmental Education and proposals for this are made in the next chapter (see p.37).

Conclusion

It appears that Environmental Education is returning to the minds of curriculum planners with the development of a plethora of new courses containing opportunities for Environmental Education which did not exist a few years ago. However, they still lack co-ordination. Further it seems that the greatest efforts in Environmental Education are still being made at the lower and middle levels of the ability range so that the so-called 'academic' pupils can complete an educational career without ever being exposed to Environmental Education and its attendant benefits, a poor preparation for future decision-makers. Perhaps 'Ten Years After Gilbert' we might see another impetus given to Environmental Education for all, for the mutual benefit of everyone concerned.

CHAPTER 4

CONTINUING EDUCATION AND PARTICIPATION

In the post-school sector Environmental Education is not nearly so visible as it has become in the school sector. Developments within the formal system have been rather randomly distributed, both institutionally and geographically, because innovative work has usually stemmed from individual enthusiasts rather than from agencies. Some significant advances should, however, be noted.

Stirling University now has a Department of Environmental Sciences, the first in Scotland of that name, while Edinburgh University has for some time promoted interdisciplinary exchanges through its Centre for Human Ecology. The work on Environmental Impact Assessment stemming from the Centre for Environmental Management and Planning at Aberdeen University has an international reputation. Other university departments active in environmental fields — Geography, Biology, Forestry and Natural Resources, Planning, Adult Education and others — have established links with schools, while the Agricultural Colleges now have valuable interaction with most other countryside users. Further Education colleges have become involved through the debates about new curricula for the 16 - 18 age group, although the position of Environmental Education in that context remains unclear. It is in the informal sector, in Adult and Community Education, that the least development has taken place.

These lines of development have proceeded independently, reflecting the fragmented institutional structure of post-school education in Scotland. This fragmentation precludes the development of a coherent policy on Environmental Education and presents a bewildering bureaucratic face to potential clients. Such a policy for Environmental Education awaits the creation of a larger overarching policy for Scottish post-school education as a whole. Such a single body of policy does not yet exist. It is only recently (1984) that the Scottish Tertiary Education Advisory Council (STEAC) was set up specifically to take a complete overview of the post-school sector and at the time of writing its policy recommendations are still awaited with interest. Any proposals for substantive integration will require institutional reforms if they are ever to be implemented.

Even presuming some new integrated approaches issuing from STEAC, a considerable advocacy task still remains to be done, to convince public agencies of the key role of Environmental Education within any new system. This chapter will describe some of the circumstances which point to the necessity of including Environmental Education in post-school curricula and will outline some guidelines for structuring its presentation.

Lines of change in educational thinking

Two reports published since 1974, the Alexander and the Carnegy Reports, accorded a central position to the general need for education for participation. Both described this in terms which come close to specifying Environmental Education as a component of such education, although stopping short of calling it by that name. Alexander, in 1975,[4] identified a primary task of Adult Education as being "Education for Change". This was thought necessary because:

"Many individuals wish to play a more active part in shaping their own

physical and social environment. They seek opportunities to participate in the making of decisions ..." (Alexander, p.27).

Carnegy, in 1977,[12] described, among the ideal aims of Community Education, the need to encourage people to seek opportunities to

> "participate in the shaping of their physical and social environment and in the conduct of local and national affairs." (Carnegy, p.7).

Alexander went beyond the declaration of aims to discuss guidelines for realising them. Of education for change the Report indicated that it will need to:

- be based on a community development approach,
- make use of local frameworks such as Community Councils,
- give people an understanding of, for example, the factors relating modern industry and pollution, so that they can take an informed view of matters where development and environment collide,
- extend people's understanding of technology generally,
- foster social and political education.

(Paraphrased from Alexander, pp. 33-35).

Although these statements are still in the realm of good intentions rather than operational prescriptions, they do contain important keys to the making of any coherent model of Environmental Education. These are:

- the community or locality as the preferred scale,
- involvement of local organizations in the activity,
- tuning the understanding of citizens to dealing with planning problems,
- observing local political (small p) awareness to be of central importance.

This will be returned to later in the chapter.

The Scottish reports quoted above are part of a broad stream of educational thinking which has developed the idea that education should be structured to give everyone the chance to connect to it, as often as he wishes, throughout his life. Others besides Alexander and Carnegy have observed that people need education for participation in planning matters. James[41] writing of the ideals of adult education gave as one group of aims:

"...to create in life

- values, not only personal, but social and political,
- behaviour that is not only private but public,
- scope for concern that is not only local but global,
- ethical motivation that is satisfied not only by charity but works for justice."

It is clear that education as a whole, as well as any subset of it like Environmental Education, has two interwoven threads:

(i) The organizational structure through which the product is delivered (and organization itself has two levels — the non-spatial management structure and the spatial structure of institutions on the ground);

(ii) the range of content available in the learning process (and content has two aspects: kind of topic and style of teaching and learning).

Organizational Difficulties

Scottish education has been preoccupied for a long time by the pursuit of certifiable qualifications. The main organizational structures reflect this. Statutory schooling is in the hands of one wing of organization, university education in another, further education in another. Community education, although a recent arrival (since Alexander), has speedily taken on a professional self-perception of its own, different again from the others. Adult education, the perpetual Cinderella, is the least "organized" in the professional sense. This has the advantage of keeping it largely free of professionalisation, but has the disadvantage of rendering it difficult to see and understand, if one is a citizen.

The organizational landscape is dominated by strong vertical organizations, each walled from the other, professionally demarcated, and beyond the capacity of most people to "see it whole". It is hard to remember that education is a totality. It is harder still to see how a model of life-long education can ever be devised out of (or superimposed upon) such a fractured institutional structure. Movement of staff and students between sectors is virtually nil.

In the absence of a single view of post-school education there is, consequently, no single outline of the potential content of such education. The separate structures provide their separate views of their curricula. These inherit either the traditional disciplinary basis of curriculum or a shifting (but also rather traditionally specified) "vocational" curriculum.

Environmental Education is a cross-disciplinary field of study. As such it is difficult to incorporate into a system tram-lined by disciplines. Although it may arguably be the most important of all fields of study to secure reasoned decisions for our collective future, it does not qualify students (of any age) for a piece of paper negotiable with prospective employers. It is thus accorded low status at every level of education, and there is no consumer pressure which would cause bureaucratic re-appraisal of this position. In times of economic stress, such as the 1980s, a cross-disciplinary subject area looks like a frivolity, "something we cannot afford".

It is also in times like the present that rising unemployment sets up political pressure to do something more apparently directly related to a specific problem. For those who interpret unemployment as partly the result of unemployability (i.e. lack of presumed essential capabilities), the answer is "better training". The government Youth Training Schemes, organized by the Manpower Services Commission, run at a slightly awkward angle across the SED Action Plan for 16+. A haze of confusion hangs over the potential curricula of both, which are currently being compiled from parts to wholes. We notice again the absence of a top-down overall logic for curriculum content. Although environment features among the draft 16+ module packages it too has been assembled as pieces which do not add up to a whole. An alternative scheme will be outlined later (p.37).

It is noticeable that the YTS and the 16+ Action Plan tend to continue the British

tradition of "front end loading" in education, although the upper age limit has drifted beyond 18 in practice. (The over-18 survivors are those "bright" enough to have got into the university and college sector). With demographic changes in Scotland tilting the balance steadily away from the younger age groups, the reorganization of post-school education on a widely accessible and life-long basis becomes daily more urgent. Equally urgent is the definition of a structured curriculum in Environmental Education and its advocacy as part of the life-long curriculum.

External factors creating conditions for the better development of Environmental Education

The preceding paragraphs have viewed the scene from inside the confused circumstances of post-school education. Looking back towards education from the outside, where important changes have taken place in public administration and non-educational professional practice, the case for (i) seeing post-school education whole and (ii) seeing Environmental Education as a crucial element within it, becomes very strong.

(a) The irreversible trend towards more public participation

The whole idea of public participation was the child of the 1960s. The first statutory obligation laid upon public servants to consult with citizens before finalising decisions was written into the Town & Country Planning (Scotland) Act 1969. Although it is still only planners who have the legal obligation, the ethos of participation has seeped into other departments and styles of professional practice. Practice is highly variable and the traditions of certain professions are not very open to this innovation. There is very little public participation in the planning and delivery of health services, for example, or, it must be said, in education policy-making at any level.

In spite of this, and possibly because the much maligned Planners have actually been offering participation for about 15 years now, there is a tide of expectation in the minds of citizens. More and more of them expect to be consulted at some stage especially about environmental matters. More and more of them resist having good done to them, without prior discussion, by transient professionals. This tide cannot now be reversed and should be welcomed: the creation of a constructively critical public through the provision of relevant educational experiences may be the best possible safeguard of a genuinely democratic society. So we return again to the question: what is appropriate education for participation?

(b) Growing perceptions of belonging to localities

People live in places which become familiar, which they change in modest ways and which in similarly modest ways change them. Environmental Education includes the study of peoples' activities at places and through time, of the complex inter-relationship between these, and of the societal processes man has devised himself collectively to steer this relationship. The word "community" is a difficult one because it always carries connotations which are both non-spatial (the community of the unemployed) and spatial (the residents of locality X). In colloquial speech it is the spatial connotation which is most often implied. In the 1980s we observe a number of examples of grassroots attachment to place turning into valuable (and educative) channels of local social development.

In Scotland the Craigmillar Festival in Edinburgh and the Easterhouse Festival in Glasgow have acted as catalysts which have brought to light immense local talent and energy, and capacity to work together on a wide range of cultural and social (and economic) projects.

The Bellarmine Environmental and Community Resource Centre (BECRC) in Glasgow[9] has acted as a source of practical help to local residents' groups as well as to schools' environmental projects. The Priesthill Initiative (one of Strathclyde Region's areas of priority treatment) is nearby, and has an environmental committee made up of technical officers and local residents. This committee deals with a continuous succession of local environmental problems (e.g. dumping and vandalism), and receives practical support from the staff and the environmental archive at BECRC.

Some deprived areas have produced a recent and growing demand for classes in local history — an important expression of the sense of wishing to belong to a place, now stated in places as unlikely as Glasgow's peripheral housing schemes. The historical dimension has always been an important element in the SEEG model for the study of Environmental Education (see p.20).

Perhaps linked to the growing sense of history, but also to a sense of community caring, is the increasing contact between primary children and local old people. The old people are being recognised as a rich resource of knowledge of the local past or the traditions of the wider city. There is every reason to seek to link this valuable knowledge into adult education work. Not the least of the outcomes of this work would be to give the elderly a respected place in the social development of their own communities.

(c) Changes in styles of public administration — the "area approach"

Two streams of events have converged to create the current administrative device known as the area approach. From one side (and arguably from an educational source, the Plowden Report, 1967[22]) comes the perception of "deprivation", and the stream of social, economic and physical policies which have been devised to tackle it during the 1970s. From the other side comes a managerial style called "corporate planning" (deriving from private business management), the trademark of which is to see problems whole, to deploy staff to meet them in configurations which fit the problem, and to step the action down in a controlled way from single policy through detailed sector plans to creating changes on the ground.

From the deprivation stream comes the idea that such problems cluster in broadly definable territories (areas) and that equality of provision is not enough and must be replaced by positive discrimination in favour of such areas. From corporate management comes the idea of working from the issues back to the professionals who will be allocated to do the job (replacing the traditional definition of problems as being "an education problem, a transport problem, a health problem"). The corporate management approach fitted the manifestly cross-disciplinary problem of deprivation. Strathclyde Regional Council on first taking office in 1974-75 stated straightaway that the two key issues in the region were the need to foster employment and the need to eradicate deprivation.

Areas of Priority Treatment (APTs) were defined and the resources and skills of the region's staff were focused upon these. Alongside this, and interweaving with it,

a Committee on Community Service Provision was investigating the need to rationalize the actual organization of the social and community support services which might be directed to areas in need of assistance. This work, too, pointed towards a cross-disciplinary approach and a delivery of service which was geographically local — thus visible to and accessible to the citizens who needed it.

A gap still remains between the ideal and the actual in the area approach to administration. There are now Area Teams working on regional functions in their APTs. There are Area Management teams working on Glasgow District Council functions. They do not all work within the same territorial units, nor indeed do comprehensive cross-disciplinary teams work on site in any areas. Good works may descend from corporate planning teams to areas of deprivation, but the channels are still strongly professionalized. To the citizen's eye "they" remain a fragmented army which is almost impossible to keep track of (since they all answer to different bosses) still less "participate" with.

To close this credibility gap it will be necessary to envisage a rather radically devolved system of administration. Fig. 4.1 is a cartoon of what is and what might be.

Against this change in public administration, now stuck half way to the ground, the factors described above are building up a client demand for focusing attention on localities and doing things at local scale. People wish to participate, and will do so, if a framework exists within which they can do so. Education for participation has long been a stated need. Alexander[4] and Carnegy[12] have been quoted, and it is implied in both these reports that this education should be:

— delivered within a local framework (Alexander refers to Community Councils as one example vehicle),

— offering a wide range of education (and not deciding from on high that deprived area citizens need training only),

— incorporating local people and organizations in the process of assessment of local needs (Carnegy) and even perhaps in designing courses,

— using the locality itself as grist to the learning mill i.e. learning many things through a local starting topic and learning about the locality, its people and its environment.

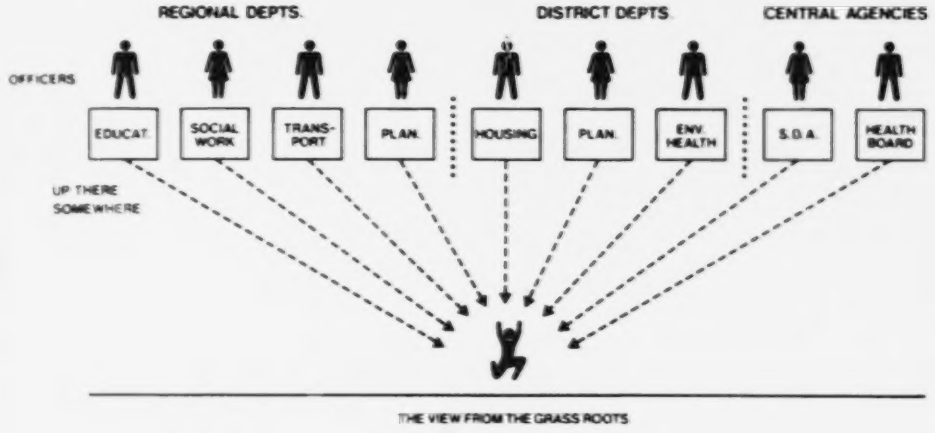
If such a prescription could be realised, not only would local people learn how to learn (for its own sake) but they would learn how to organize learning.

James[41] describes the necessary conditions for a revitalized adult education system:

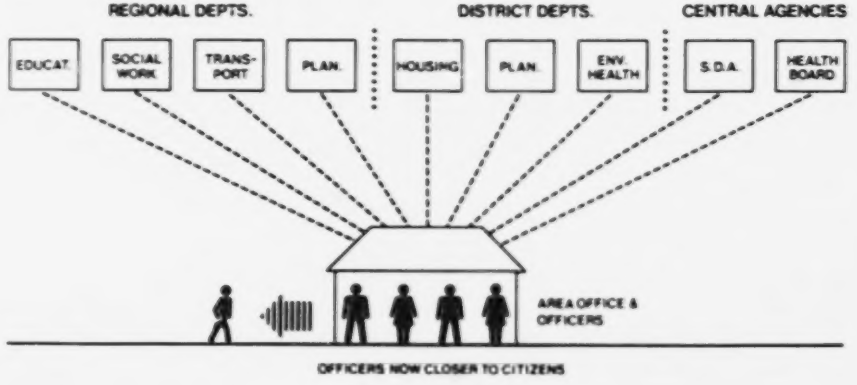
> "a planning process which relates adult education agencies ..... with non-educational agencies in joint approaches to social policy .....
> an administrative process which co-ordinates the provision of services which in the past have often been separate;
> professional behaviour which blurs the distinction between adult education and other professional workers and between professionals and volunteers."

FIG. 4.1

TRADITIONAL MODEL OF SERVICE PROVISION
maximizing administrative convenience



AREA OFFICE SYSTEM OF SERVICE DELIVERY ("one door")
maximizing client accessibility



Everyone keeps circling back to locality scale, cross-departmental co-ordination, and citizen accessibility. Can the ideal model of local administration in Fig. 4.1 be seen as having a locality-based education service embedded within it — a service which would embody the three principles above?

Towards a locality-based learning network

Fig 4.1 has illustrated the confused perception by a citizen of the traditional departmentalised system of local service provision. Within the education service alone a similar diagram could be drawn demonstrating the vertical splintering of that service into parallel groups of professionals. There are too many different and badly labelled doors into post-school education. Clarity of system, visibility and simplicity of access, and genuine choice from a single extensive curriculum, can only be achieved if there is some cross-linking of the organizational threads at a real place at locality level (analogues to the "one door" Area Development Centre outline in Fig. 4.1b). Gatherer[33] has argued the case for such clarification of provision, and has outlined the possible shape of a community network. The following model, developed independently during research into education with the GEAR area of Glasgow, is somewhat similar.

(a) Structure

A Local Learning Centre should be established as the organizational core of the network. It should be clearly visible at a place where people converge anyway — an existing social focal point. It would be the Centre's task:

(i) to design a "total possible" kind of curriculum menu, which could be put before local citizens;

(ii) to design the optimum local delivery system (defining those elements which require to be "taught" at the Centre itself and those which can be carried to the clients along the network);

(iii) to design the styles of teaching and learning to suit each kind of topic and each pattern of delivery;

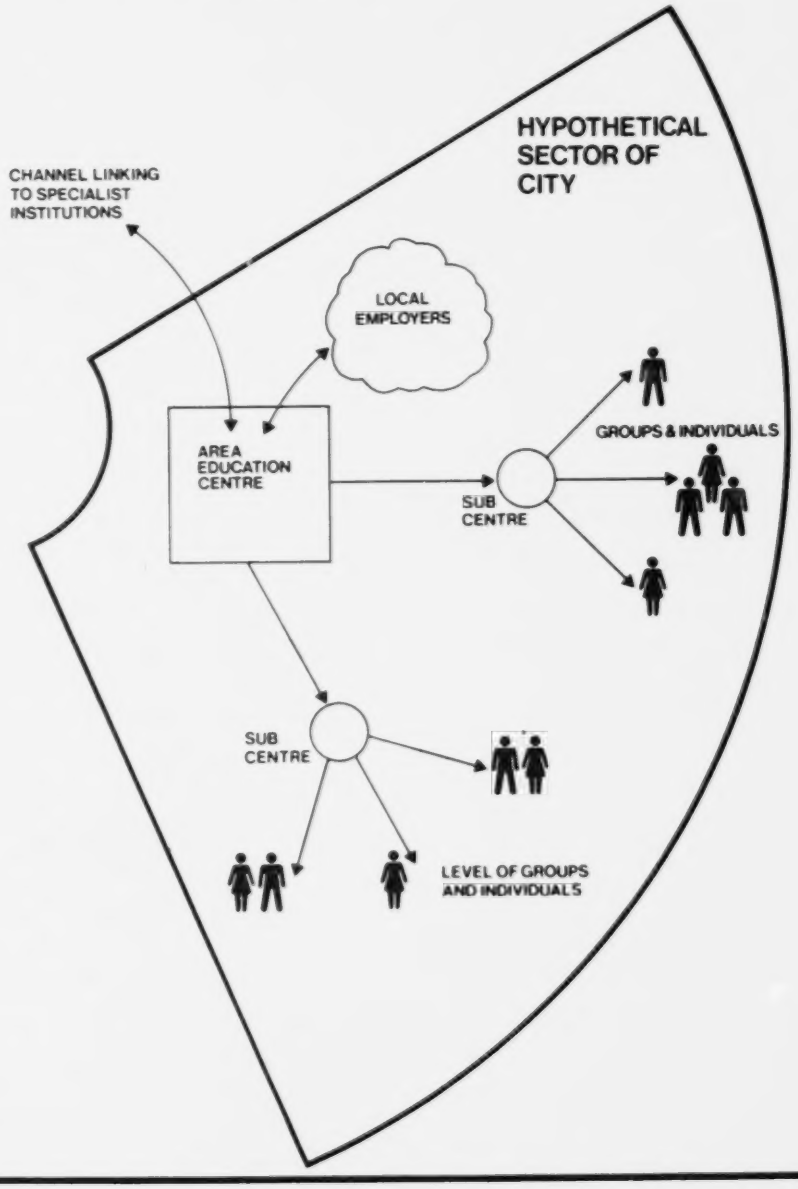
(iv) to link existing elements, such as schools, libraries and arts centres to its work, creating a local "campus".

A further task for the Centre should be to act as the core of a Community Information Service. Such a locally based centre could be the focus for participation in local educational policy-making in relation to the development of the structure of a delivery system and in relation to the range of curriculum carried by it. No such mechanism for participation exists at present.

Fig. 4.2 presents a diagramatic "geography" of a locality education network. The basic principle is that the Centre "maps out" the possible nodes and links in the reticule, and activates such ways through it as are appropriate to curriculum choice and local demands, as these vary from time to time and from neighbourhood to neighbourhood.

FIG. 4.2

MODEL FOR A LOCALITY BASED EDUCATION SYSTEM
organizational centre plus network



(b) Curriculum

Various descriptions exist of "total possible" curricula. Three are given below. The first two work from top down, from a single thing called "education" to its main sub-divisions, and are listed in parallel for comparison.

List A	**List B**
1. Education for employment	1. Basic literacy and numeracy
2. Education for life	2. Improving personal skills (professional, trade and social)
3. Education for self development	3. Social capability (e.g. health education, working the system)
4. Education for pleasure	4. Leisure and recreation
5. Education for the world	5. Local environment and development
(Strathclyde Regional Council, 1981)[75]	(from unpublished proceedings on tri-national conference on continuing Education, Manchester, 1980)[16]

Gatherer[33] defines the ideal provision available through a network in terms of existing organizational categories, but the scope of his idea is similarly wide ranging:

1. Orthodox academic course
2. Vocational preparation and vocational activities
3. Recreative and cultural activities
4. Community service activities
5. Adult and continuing education provision
6. Educational information and counselling services
7. Employment related programmes

In all three there is an echo of Alexander's and Carnegy's "education for participation" — Number 5 on each of the parallel lists, number 4 on Gatherer's list. We have returned once more to a specification for what SEEC would understand as Environmental Education. A locality education network must carry some structured learning which is about the locality, and for the development of local confidence and capability to participate. This learning should use the locality as the laboratory for developing "local analysis capability" in both the social and physical environments.

If a local education network exists to carry this learning, then the enhanced participatory capability can flow back quickly into the next cycle of system design and improvement. The learners can themselves become teachers within the organizational system. If, in addition, there is a local administrative office located within the area, then other professionals working for the area become accessible as "teachers" in the field of locality environmental study. They too soon become

learners about the area through their direct contacts with local people to the benefit of their professional work. a whole self-reinforcing spiral could be set turning, of rising quality of citizen capability, professional sensitivity, local effective administration and genuine democratic participation. One of the keys to this desirable future is clearly the development of Environmental Education.

What is the next step for Environmental Education?

The present is not propitious for such drastic shifts in public administration as would be required to reach the full development of the system modelled above. However some serious thinking is needed about the content and style of learning for Environmental Education at post-school level. Even the existing fragmented administrative structure could be delivering far more of this kind of study than it does. SEEC, in its capacity as the main advisory group on Environmental Education in Scotland, has begun to consider applications in Adult Education. In developing this, we might reasonably point out that its impact will continue to be very weak unless and until locality-based education networks are established, and visibly run, in local areas with direct citizen involvement in the management process.

(a) A structure for informal environmental learning

The Strathclyde Environmental Education Group model for the systematic study of an environmental topic in schools (see p.20) started from a discrete topic, such as Housing or Transport, and worked from descriptions of present conditions through to proposals for the future. The logic of the model is sound and it has been considered as a basis for adult studies. One substantial adaptation is required, because adults' interest has to be deliberately captured before one can hope to carry a group through the educative steps which the model suggests. The adaptation calls for the use of a topical issue rather than a single topic as the item for study.

Fig. 4.3 demonstrates how the model can carry through a local issue. The example is a proposal to base a combined heat and power scheme on the site of a conventional power station now disused. Such an idea, if carried forward, would have many visible repercussions on the local area and also invisible repercussions on the quality of living.

Progressing this topic through the model would allow the study group to understand a local issue, to proceed to think about energy use and conservation in the wider city, thence to discuss national energy policy and even to continue to world scale energy problems. This exactly fits Strathclyde Region's prescription for "Education for the World" (see p.35).[75] (It emphasized the idea of first understanding local issues and then relating them to the wider world). The existence of the Strathclyde Group's model[74] provides a highly portable structure through which organizers of adult study groups can process issues topical to different places at different times. Its underlying educational logic ensures that no locally focused study will lapse into mere parochial description, leaving no enhanced capability behind when the course ends.

ADAPTATION FOR A COMMUNITY ISSUE

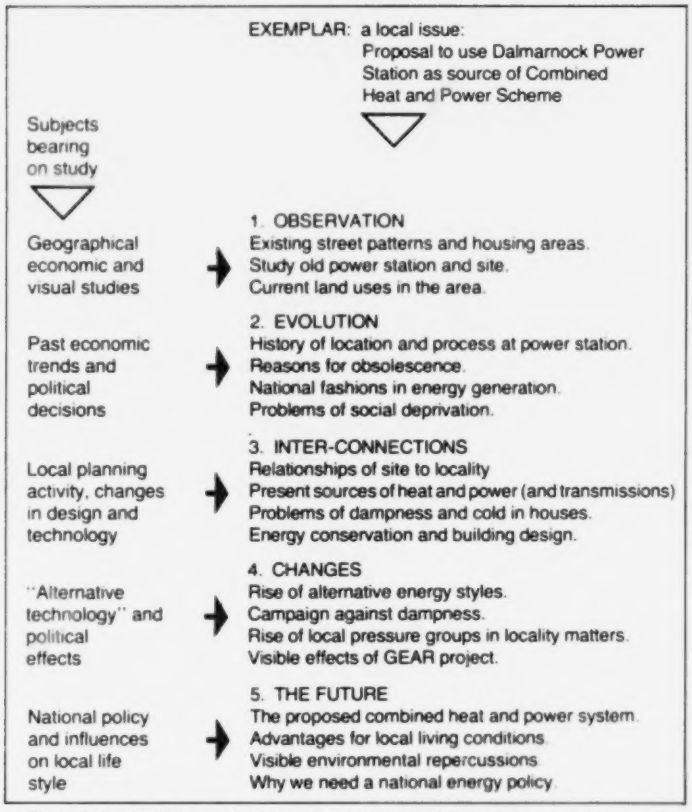

EXEMPLAR: a local issue:
Proposal to use Dalmarnock Power Station as source of Combined Heat and Power Scheme
Subjects bearing on study
Geographical economic and visual studies
1. OBSERVATION
Existing street patterns and housing areas.
Study old power station and site.
Current land uses in the area.
Past economic trends and political decisions
2. EVOLUTION
History of location and process at power station.
Reasons for obsolescence.
National fashions in energy generation.
Problems of social deprivation.
Local planning activity, changes in design and technology
3. INTER-CONNECTIONS
Relationships of site to locality
Present sources of heat and power (and transmissions)
Problems of dampness and cold in houses.
Energy conservation and building design.
"Alternative technology" and political effects
4. CHANGES
Rise of alternative energy styles.
Campaign against dampness.
Rise of local pressure groups in locality matters.
Visible effects of GEAR project.
National policy and influences on local life style
5. THE FUTURE
The proposed combined heat and power system.
Advantages for local living conditions.
Visible environmental repercussions.
Why we need a national energy policy.

Fig. 4.3. An application of the framework to a possible study of a local community issue by an adult group.

(By courtesy of *The Environmentalist*[30])

(b) Environmental Education for 16+ age groups

At the interface between school and post-school education lies the 16+ Action Plan (see also p.24). In its present form in Scotland it does not include a coherent and internally consistent package dealing with environmental study. SEEC has devoted some attention to this gap and is preparing an appropriate curriculum structure.

We need to consider what the total potential range of topics for study may be. The description used in school studies would be equally relevant here; the field of study is the interaction between peoples' activities, the natural world in which they take place, the buildings and man-altered spaces which are carved out to house the activities. It is further concerned with the governmental guidance processes which overlook and steer the interaction through time. These interacting and overlapping fields are summarized in Fig. 4.4.

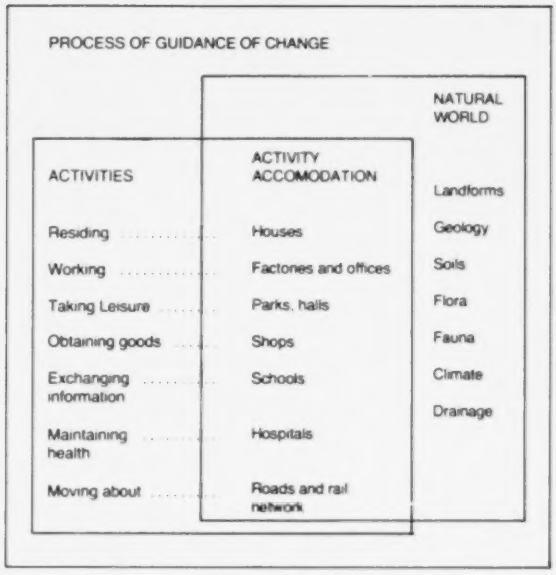


Fig 4.4. Elements which may be involved in an Environmental Study Project. The Venn diagram shows their relationship to each other

(By courtesy of *The Environmentalist*[30])

For 16+ study one needs to design a coherent selection of modules from the above field. Three families of modules can be identified.

There are studies which could start with the ACTIVITIES set and its companion the BUILT ENVIRONMENT set:

(1) Houses and housing
(2) Work and workplaces
(3) Leisure and recreation
(4) Shops and shopping
(5) Information and communication
(6) Health services and keeping well
(7) Moving about.

Then there are studies which could start in particular NATURAL WORLD contexts, for example:

(1) Climate and daily life
(2) Rural development
(3) Coastal areas
(4) Mountain areas
(5) Water and water supply
(6) Conserving the natural environment
(7) Energy and energy supply.

Combining all the sets in the Venn diagram (fig. 4.4) and seeking to highlight the processes of GOVERNMENT a bit more, some studies could simply start with THE LOCAL AREA (as a unit, wherever it is) and unpick the social, economic, physical and political elements which are acting in it together.

(1) Social change and planning in the locality,
(2) Resources and economic development,
(3) Design and conservation of the local visible environment,
(4) Local decision-making about managing the environment.

Each module can be given structure by using the five-stage Strathclyde model quoted above.

Thus we have arrived at a minimum desirable list of 18 topic areas. There is still an enormous variety of ways in which each of the 18 could be taken through the SEEG structuring frame, and this would be left to individual teachers to adapt to local place, time and people.

Conclusion

Environmental Education for the post-school population remains a neglected field, suffering acutely from the organizational fragmentation of post-school education. Yet unless and until a well structured framework is available, true public participation is virtually doomed to remain a dialogue of cross-purposes: the citizen lacking both the capability to formulate environmental planning ideas and the confidence to speak out; the environmental professionals, trapped by bureaucratic procedures in city centre offices, lacking the sensitivity to local issues which only local knowledge could give them.

Education for participation should mean education of all those involved: citizens, professionals and local politicians. It should mean the informal learning which comes with any public activity; and it should mean structured learning about the environment which will support (and itself draw upon) community based activity.

The idea has been developed that a locality-organized administrative system would provide the optimum conditions for developing education for participation. Even in the absence of such a total system, a unified approach to local learning via a Learning Centre-plus-network would provide local bases for a similarly unified approach to designing a curriculum menu in which environmental learning would form a key element.

This chapter has presented a structure for such environmental learning. Falling back to the most pessimistic position, where no organizational change takes place in post-school education, this curriculum structure is robust enough to give shape and educative value to even sporadically organized studies of local issues. At that it would not be ideal education for participation, but it would be a start.

We must hope that the next ten years will see some more radical thinking about Environmental Education for adults than have the last ten.

CHAPTER 5

ORGANIZATIONS CONTRIBUTING TO ENVIRONMENTAL EDUCATION

If this chapter included a list of all the organizations involved in Environmental Education there would be little space left for anything else. Since such lists have already been published, for example by the DES in 1981,[23] there is little point in repeating them here. Instead this chapter concentrates on a limited number of organizations which are particularly important for Environmental Education in Scotland.

The Nature Conservancy Council

The NCC[47] is primarily concerned with the management of National Nature Reserves, with scientific research and with giving advice on nature conservation to landowners, planners and the government. There is no Environmental Education unit within the NCC in Scotland and the educational work is undertaken by staff as an extension of their scientific and managerial duties. Despite tight financial and time constraints, much valuable Environmental Education has been achieved:

(a) Through specific education facilities in National Nature Reserves such as the development of nature trails, the provision of small interpretative centres and the use of wardens to provide information to school children and the public: for example the Inchcailloch Nature Trail on Loch Lomond is visited by 1,500 school children a year on organized excursions and by large numbers of adult and family groups.

(b) Through the provision of grants and expertise to other organizations: for example, the attractive 'Wildlife of the Forth' Wallchart and teachers' notes[48] were developed in close consultation between NCC staff and regional educational advisers. The Small Grants Scheme introduced in 1983 has been improved in 1985 and can contribute towards teaching materials and information packs as well as towards the purchase and management of land for educational work.

(c) Through the Shell Better Britain Campaign,[73] which NCC co-sponsors along with Scottish Conservation Projects: through this successful campaign it has become increasingly involved in projects undertaken by schools and a variety of youth and community organizations. With the support of Shell, the campaign offers voluntary groups of many kinds both material and advisory support for conservation projects many of which have been outstanding in their success and inventiveness.

In recent years much activity has been concerned with the urban environment. This has included the provision of high quality interpretative and illustrative material on urban wildlife based mainly on experience in the Birmingham area, and support for groups such as the Glasgow Urban Wildlife Group.[36] NCC has also used the vehicle of local authority structure plans and local attempts to emphasise the opportunities for education and conservation in and around towns. It has itself carried out detailed studies in Clydebank District, surveyed the derelict land in Lothian Region and encouraged park managers to take nature conservation into account through, for example, a course for park managers which was held in Aberdeen.

It is to the credit of the staff of the NCC in Scotland that so much has been achieved, but this cannot hide the fact that there is a gap caused by the lack of anyone in the NCC with a remit to liaise effectively with the separate and distinctive educational and examination systems in Scotland. This lack is particularly important at present, in view of the major changes which are now taking place in the system.

The Countryside Commission for Scotland

The CCS,[20] like NCC a sponsor of the World Conservation Strategy (see p.54), plays a significant role, though often an indirect one, in the whole field of conservation education; its main activities are concerned with informal educational opportunities for the general public but it also influences many aspects of formal Environmental Education.

One of the main developments in the last ten years has been a marked increase in the number of country parks and of ranger services, in both of which the Commission has made a considerable investment of countryside grant. There are now around 30 registered country parks in Scotland, the majority of them close to urban areas and, although their prime purpose is a recreational one, they are also a very valuable educational resource. Several country parks now have links with neighbouring schools, either individually or through liaison groups of interested teachers and advisers. Primary and less academic secondary pupils make most use of the parks for educational purposes, though some schools encourage students throughout the whole ability range — including the disabled — to take advantage of these on-the-doorstep fieldwork opportunities. Visitor centres in country parks are primarily designed to interpret the local area to the casual visitor, but some parks, like Culzean, Haddo and Almondell, have additional facilities for school groups.

In this work, where children are coming face-to-face with all aspects of the living countryside from natural history to industrial archaeology, the countryside ranger tends to be the key figure. He, or she, may be employed in a country park or on a private estate, and one of the ranger's main duties is to ensure that visitors to the park or estate have the opportunity to learn more about the area. Not every ranger in Scotland will offer the same kind of programme to a visiting school group but every ranger is made aware of the needs of those teachers who lack the confidence and experience to take classes into the countryside on their own. This is achieved through a national system of high quality training courses. The main course is organized and conducted by CCS staff on an in-service basis for recently appointed rangers. It lasts for 7 to 8 weeks and covers three main areas:-

(a) Resource assessment and management;

(b) Visitor protection and surveillance;

(c) Communication with school children, visitors, local landowners etc.

The two days devoted to education include contact with teachers and pupils. The main course has been refined over a period of years and provides a valuable stimulus and insight into a ranger's work. There is also a follow-up course on 'Children in the Countryside'. This is concerned with children using the countryside informally rather than as part of a school group.

Many rangers are also able to go into schools, especially during the winter months, to do preparatory work before a school visit. This helps to ensure that good use is made of the limited time available for visits and that the visits become a part of

the school's normal programme linked with other aspects of the pupils' work. Although few rangers are qualified teachers this contact with the formal education system, and their wide ranging informal contribution through wildlife clubs and contact with adults, adds up to a very valuable contribution to Environmental Education. Rangers have the additional support of their own Scottish Countryside Rangers' Association.[60]

The Commission from time to time sets up special projects under its research budget to deal with particular problems, and although in many cases these projects have aims other than educational ones they often develop very clear educational implications. One example is the Central Scotland Woodland Project, set up to increase tree planting opportunities in part of the Central Belt. It was very quickly realised that the sympathy and greater understanding of the local children was going to be a vital ingredient in both the short-term and the long-term success of the project, now continuing as the Central Scotland Countryside Trust.[13] A different kind of work done under the research budget was the preparation of a useful Directory of Outdoor Centres,[21] in response to considerable demand from user bodies in Scotland and much further afield.

Thus the Commission's effect on Environmental Education is felt at many levels. Sometimes it is at the level of policy-making and strategic planning of facilities; sometimes it is through grant aid to a variety of other bodies; and often it is involved in advice to either the provider of a countryside facility or to the user of that facility on how to achieve the greatest benefit in educational terms from our fragile countryside resources.

The National Trust for Scotland

The NTS[46] was originally concerned only with the conservation of historic buildings and the land around them but the number and variety of its properties have increased greatly and now include, for example, islands such as Canna, large areas of mountains as in Kintail, and the tiny tenement flat in Glasgow as well as castles such as Culzean and Crathes.

Nearly all of these properties provide opportunities for Environmental Education though some, such as St. Kilda or Fair Isle, are difficult to reach! The Trust has recognised the importance of its educational role by appointing staff to develop this side of its work and by publishing an 'Educational Guide to the National Trust for Scotland'.[50] This guide gives basic information on Trust properties and on how to make the best use of a visit: it is a valuable educational resource.

Aware that the Trust could have considerable appeal for young adults, Youth in Trust was formed in 1980 and now many local groups work on conservation projects. The importance that the Trust attaches to Youth in Trust is considerable; for while it can offer exploration, adventure and education in the widest sense, the young people have in their hands the care of the heritage for the next generation.

The Trust employs countryside rangers (as described above) on some of its properties. Many Trust properties are however open to the public by virtue of voluntary support. The guides who work in houses of the Trust do so voluntarily and take upon themselves the duty to train for the task. In this the Trust has been consistently supported by University departments of extra-mural education whose classes the volunteers attend in the closed season. They bring to their task

increasing expertise, consistent enthusiasm and originality, excellent attributes for informal Environmental Education.

Scottish Conservation Projects

The Scottish Conservation Projects Trust was established on 1st April, 1984. The new organization has taken over the role of the British Trust for Conservation Volunteers, Scottish Region, and remains affiliated to BTCV. The change of name and status is symptomatic of the rapid growth that has taken place in its work in recent years.

Major projects are under way in several areas of Scotland including the GEAR area of Glasgow and Central Region. These projects involve teams of full-time staff, based in the area, working with teachers and pupils on specific environmental projects. Examples of projects include creating wildlife gardens, cleaning and fencing burns, tree planting, hedge planting, and making nature trails.

SCP also operates a programme of 22 working holidays during the summer. These give young people the opportunity to visit some of the more remote and beautiful areas of Scotland whilst undertaking useful conservation work under the guidance of an experienced leader. Most of the work is on nature reserves and involves such management tasks as fencing, making paths, clearance of rhododendron or other unwanted vegetation, repairs to bridges and survey work.

SCP encourages and helps local conservation groups throughout Scotland and organizes training courses for those involved in conservation. While the emphasis of SCP is clearly on practical conservation work rather than Environmental Education it also has the general aim of increasing awareness and understanding of the environment so that much valuable informal education stems from its practical activities.

Keep Scotland Tidy

The Keep Scotland Tidy Group[43] is a part of the Keep Britain Tidy Group and commenced operations in 1973. At first its efforts were limited because it had only one full-time and one part-time staff member but towards the end of 1982 it became possible to appoint additional staff through MSC funds. The three main areas of activity are Education, Enforcement and Example.

For education the availability of MSC funding has enabled a large number of unemployed teachers to use, in schools in many parts of Scotland, the materials prepared by the Keep Britain Tidy Group's research team. By early 1985 these teachers were active in 17 District Council areas and plans were well advanced for recruitment in a further four. About 15 teachers were recruited to work in schools in each area and in some cases it was possible to recruit additional staff to work in the local community. This is also happening in Glasgow where plans include 144 staff half of whom will be teachers. By the summer of 1985 it is anticipated that almost 600 staff will have taken part in this programme. Many of the teachers involved in the early stages have now obtained permanent teaching posts and are thus able to continue to use the skills and knowledge they acquired during their period on the project.

The teachers work with classes for up to 10 weeks utilising a carefully devised environmental studies programme. The programme is not just concerned with litter

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but tries to increase environmental awareness and to develop a sense of responsibility. Impressive results have been achieved in the early projects.

Enforcement is used only as a last resort but a possible £400 fine is a useful deterrent for dangerous litter dumping in the countryside. The group also tries to work through competitions and is developing 'the environment' as a theme in proficiency badge work in youth organizations.

The Scottish Field Studies Association

The Scottish Field Studies Association (SFSA)[69] was set up to promote the development of field studies in Scotland and to create a greater understanding of the Scottish countryside. Its main activities are at its Field Centre at Kindrogan in Perthshire, though some courses are held in other locations such as the Isle of Arran. While much of its work is still concerned with the provision of specialised fieldwork courses in biology and geography the Association has diversified its activities. It now offers more general courses on 'understanding the Countryside' for younger pupils and has special courses for gifted pupils and handicapped pupils. Courses for teachers and other adults, many of them highly specialised, continue to form an important part of the overall provision. The courses are led by SFSA staff and outside experts and the quality is usually very high. Following 'acclimatization' workshops held at Kindrogan by Mr. Steve Van Matre, a full 'Sunship Earth' course was also run.[81] This involved much hard work and was dependent on co-operation of SFSA staff, the CCS, teachers and pupils of the school concerned, countryside rangers and other interested people. It is very encouraging that so much co-operation and help was readily given. The course provided many valuable insights to those involved and it is intended that the experience gained during this course will be applied to other courses, both at Kindrogan and elsewhere.

Environment Centres and City Farms

More recently the Environmental Centre in Edinburgh[25] and the Bellarmine Environmental Community Resource Centre in Glasgow[9] (see also p.30) have been set up to encourage interest and involvement in the environment. The Edinburgh Centre has an emphasis on carrying out practical projects in Lothian Region while the Bellarmine Centre emphasises the provision of resources and information; both centres provide a wide range of support which is valued by those teachers, youth leaders and community workers who are involved, or would like to become involved, with conservation work or Environmental Education. Both centres have suffered from some uncertainty about their future and it is to be hoped that means can be found to give them long-term security. The Urban Studies Centre in Aberdeen,[1] an even more recent development, should provide a similar focus for urban Environmental Education in Aberdeen.

The provision of resources for environmental work has increased substantially in recent years. In some places this is due to an increase in facilities of a sort which have been available for some time, for example the increasing number of nature trails and the development of an urban equivalent, town trails. Other facilities such as City Farms are entirely new.[15] The City Farm movement, with support from the Inter-action Trust, started in England in the mid-1970s and has since spread to Scotland. There are now well-established City Farms in Edinburgh at Gorgie, in Livingston, in Glasgow at Possil, and in Erskine, with plans for others in Dumbarton and elsewhere. These farms have their own particular strengths but all of them try to give children opportunities to see and work with a variety of farm animals and to

undertake some form of gardening. Most also have a range of pet animals as an added attraction. Although most City Farms are short of funds and have a very small staff they attract large numbers of visitors and many have developed strong links with the local community. This is a very encouraging development which is a valuable addition to the range of resources available to schools and individuals.

Collections

Zoos are also an important educational resource and both Edinburgh Zoo (run by the Royal Zoological Society of Scotland)[52] and Glasgow Zoo (run by the West of Scotland Zoological Society)[37] have strong educational units attached to them. The Glasgow Zoo has one permanent education officer but has made good use of temporary staff supported by the MSC. The Edinburgh Education Unit also uses MSC staff and has a larger permanent staff with more facilities on site.

The Edinburgh Education Unit has pioneered several important developments such as the use of volunteers and the Interlink Programme. Volunteers give regular help at the Zoo and carry out a wide variety of tasks including animal handling classes for adult and young visitors to the zoo, manning interpretative trolleys and operating a brass rubbing centre. Over 100 volunteers are involved and co-ordinating their activities has become a major task. The Interlink Project involves collaboration between the Zoo and one or more other facilities or organizations such as the Royal Botanic Garden, the Commonwealth Institute, the Forestry Commission, the Royal Society for the Protection of Birds and the Royal Scottish Museum. The schools involved choose a theme and visit two, three or more centres as appropriate for that theme. For example, the theme of Evolution involves a 3-way Interlink with the Zoo, the Royal Scottish Museum and the Royal Botanic Garden. Both this scheme and the standard educational visits are very popular and about 50,000 children visit the Zoo as members of school groups each year. Schools can choose from a wide variety of topics ranging from 'Dinosaurs Today' to 'Animal Communication', 'Animals of Australasia' and 'Scottish Wildlife'. Classes and suggestions for work are available at all levels from nursery and infants to senior secondary levels though most groups come from primary schools. Most pupils find the visit an exciting experience and it often stimulates high quality work when they return to school.

The quality of the material used in these courses has been highly praised. The Education Unit also runs a 'Gannet Club' for Associate Members of the Society, with the help of volunteers. This meets regularly throughout the year on a Saturday and attracts between 100 and 160 young people who participate in a large number of activities in the Zoo. The Unit is also involved with adults through members' evening programmes, adult classes and outside talks. The RZSS is still developing its educational resources so as to reach a wider geographical range of people, and this will certainly be extended in 1986 when the Highland Wildlife Park near Kingussie becomes the responsiblity of the Society.

The use of museums has not shown the same spectacular growth as some of the other resources for Environmental Education but there is an increasing recognition of the valuable part they can play, both in the museums themselves and in schools and colleges. Museums can be used as a means of providing enjoyment and sharpening the senses or as a place of study for more formal inquiry and investigation. Some of the larger museums have education officers who try to encourage schools to use museums and to help them to gain as much as possible

from the visit. This might include the provision of guidance notes to teaching staff, talks to pupils and the provision of loan material for exhibitions on particular topics which are relevant to the work of the pupils in class. Museums also play an important part in informal Environmental Education with adults and family groups.

The educational resources of the Zoo and the Royal Scottish Museum in Edinburgh provided a focus for a recent research project on this type of education conducted by the Scottish Council for Research in Education.[49]

Conservation Organizations and Others

Nature conservation organizations such as the Scottish Wildlife Trust (SWT),[72] the Wildfowl Trust and the Royal Society for the Protection of Birds (RSPB)[51] have become increasingly involved in Environmental Education in recent years. The RSPB has Nature Centres in Scotland at Vane Farm, Loch Leven, and at Lochwinnoch. Both have facilities and staff for school parties and attract large numbers of primary school pupils each year. Development at secondary school level has been slow, perhaps because the Society has not appointed an Education Officer in Scotland to provide the link with the new courses which are now being developed in Scotland. In the Young Ornithologists' Club, however, it has a well established youth wing.

The SWT has recently set up a Promotion and Education sub-committee which has been trying to 'further the development of the Trust's educational role'. One way of doing this is to use the Trust's reserves for educational purposes and this is being explored. The SWT has supported the recent development of 'Watch' groups in Scotland catering for young people.

Early in 1985 Friends of the Earth (Scotland)[31] launched an Environmental Education Trust with the object of producing and distributing resource materials to educational bodies. The World Wildlife Fund (WWF)[84] fosters local groups which may develop informal educational functions.

There has been a recent growth in Scotland of Farming and Wildlife Advisory Groups (FWAGs or FFWAGs if inclusive of foresters) organized in county groups.[27] Their role is to improve understanding between different countryside users and conservation interests. In addition to providing a forum for discussion and exchange of information they produce useful educational leaflets. FWAGs are a particularly rural educational development at a time when most emphasis tends to fall on the urban population. There is also a continuing growth of activity among major countryside users, through the Colleges of Agriculture,[3] the Association of Agriculture,[6] the Forestry Commission[30] and others, to inform the public and to support teachers by publications, visitor facilities and other means.

The Domesday Project was launched by the BBC in 1985,[8] the 900th anniversary of the original Domesday Book. Scottish schools were invited to contribute to the new survey, though Scotland was not, of course, originally included in 1085. Both primary and secondary schools are involved in surveying a part of their local area and recording the information on a computer disc. Many schools have received help either from their local education authority or college of education and the survey has resulted in some high quality fieldwork with an enormous output of valuable information. This will be stored on interactive video-discs and made available to libraries and other organizations.

Commercial organizations also have a useful part to play in Environmental Education through films, publications and, in some cases, through links with environmental organizations. One example of this, the Shell Better Britain Campaign, has already been mentioned (p.40); another is the support given by British Petroleum to the National Trust for Scotland for the publication of the 'Educational Guide to the NTS'.[50]

This chapter has outlined some of the major developments in the provision of Environmental Education by organizations which are not part of the formal education system. On the whole the picture is an encouraging one and some significant improvements have been made over the past ten years. The provision is, however, very patchy and too many of the organizations are handicapped by a lack of long-term security and money, by a lack of recognition of the importance of Environmental Education or, in the case of some UK-wide organizations, by a lack of recognition of the 'Scottish dimension' in their Environmental Education work.

CHAPTER 6

THE NATIONAL AND INTERNATIONAL DIMENSIONS

For young people especially, Environmental Education is probably most effective when it is focused initially within surroundings familiar to the student. Here one attempts to establish through real experience the unity of a system in which subject and environment are interdependent and inseparable. From older people too the best responses are to topics arising from local issues, personally experienced. The past ten years, however, have been marked for many people by an extension of the boundaries within which they lead their conscious lives. Many have become more aware of the spread of both their influence and their dependence on distant places and peoples, of environmental problems which are transnational, and of the national and international agencies which attempt to manage the associated complex of resources and relationships. For a growing number strong emotional involvements have developed: particular issues have become causes, impelling enough to bring people into confrontation with authority, sometimes successfully, so that the environment has acquired a new political dimension. The rate of change often outpaces the normal speed of adaptation in education. For all of these reasons it has become steadily more important to extend the range of Environmental Education outwards to the less familiar and the unfamiliar, so that these issues can be tackled with more understanding by a better informed citizenry.

The Expanding Environment

In spite of recession and unemployment there has been an increase in the mobility of many people, through wider ownership or use of cars and through package holidays at home or abroad. For the more adventurous, opportunities have grown for outdoor pursuits such as ski-ing, mountaineering, canoeing and skin-diving, often as a direct result of first experiences at school. The geographical range has also extended — to the Alps, the Mediterranean and for some even to the Himalayas and beyond. The potential benefits that should be derived from such an expansion of experience are obvious for a better appreciation of the world in which we live. One might inquire, however, how far the potential educational value is realised.

Enhanced awareness of the variety of the human environment by direct experience through the senses — sights, sounds, smells, climate, food, languages, ways of life — is bound to grow to some degree from the extension of travel whether at home or abroad. Previous educational experience should prepare for this by increasing the traveller's receptiveness and by developing confidence to explore the unfamiliar. It should also aim to prepare people for the differences — physical, ecological, social or cultural — between their homes and those of others, and show them how to adjust their own behaviour accordingly.

The receivers of these attentions are also affected however. There is nothing new in, for example, the failure of town-bred holidaymakers to appreciate the problems of the farmer or forester, but conflicts of interest have become both commoner and more complex. Fragile habitats like sand dunes or high mountain areas are damaged or destroyed, tidal lands converted to marinas. Tourist developments for both national and international markets, often promoted in the name of improving a local economy, may alter or destroy local ways of life, the economic benefits slipping off largely elsewhere. The trend is towards providing the

tourist with an undemanding environment of familiar foods and facilities and the features which originally attracted travellers may be lost through their very success.

In Scotland we receive and benefit from tourists from all over the world, and have to manage the environmental and social consequences therefrom. We also contribute our share of British tourists travelling abroad. The resolution of resulting conflicts of interest and behaviour would come more easily if both education and planning were designed to strike a realistic balance between the provision of services for a seasonal immigrant tourist population and the maintenance of a healthy indigenous culture and landscape.

A less direct extension of experience has grown over the last ten years through television. Increased interest in environment has been cultivated, for example by superb and deservedly popular natural history programmes. Their value may be diminished, however, if they are accepted as substitutes for the real thing. The inevitable emphasis on the unusual and the photogenic may even lead people to disappointment when they try to explore nature themselves. Emphasis on the exotic may also encourage them to assume that environmental threats are mostly far away.

At the other end of the aesthetic spectrum television has widened awareness of environmental disaster at home and abroad. Urban squalor in the shanty towns of the Third World (and, of a different sort, in our own cities), disease-ridden refugee camps, starvation at the edges of spreading deserts, food surpluses deliberately destroyed, fire, pollution and the untended dead have become familiar sights in our own living rooms.

These are, however, sanitised experiences, shorn of sounds and smells and the presence of misery which would have made some of them intolerable and unforgettable if directly experienced. Instead they are described in language which sometimes verges on Orwell's nu-speak. Thus there is a danger that people become habituated to them, accepting them and their attendant violence as something inevitable in the world outside, regrettable but beyond influence other than through the despatch of money or material aid. Education has a responsibility to bring home the realities of a global environment and to prepare people for constructive policies that may help to prevent disasters.

Television shares with other media the practice of selecting the 'news-worthy', often the odd or the dramatic, and ignoring what is going well or what has been quietly remedied. Such selectivity can lead to an imbalance in the appreciation of affairs which may require planned counteraction through education. There is a more deliberately selective influence where a programmer espousing a particular cause deploys potent images which may unsettle judgement. Irrespective of the justice of the causes, the melting eyes of baby seals and the eerie songs of great whales may have done more to win public support than reasoned argument for their preservation. Conservationists should pause before they congratulate themselves too heartily on the success of these approaches. Such means, well practised by advertisers and publicists of many persuasions, have all too often proved to be capable of misuse in the management of unprepared public opinion.

So television is an environmental influence of great power and potential for which education must prepare people. The educational achievements of the BBC are outstanding, both in its own programmes and those for the Open University

which are followed by many of the public. Imaginative projects like the BBC Domesday Project (see p.46) and the Worldwise series of Channel 4 (both 1985) have immense educational value. The constructive use of such popular programmes as 'Blue Peter' must also be among the most potent influences on public opinion concerning topical issues. For full benefit television should, however, be matched by experiences of a complementary kind, and indeed some of its most successful productions already make provision for this.

Environment without Frontiers

Since the first appearance of those evocative photographs of the Earth from space the idea of its unity, the limits of its resources and the interdependence of its human crew have become more familiar. Perhaps, therefore, it has been easier for people to see how readily environmental concerns cross national frontiers.

Scotland in the last ten years has been made aware of several environmental problems which are plainly transnational in impact. The oil industry has provided excellent examples: having been sharply reminded of the extent to which our way of life could be affected by the conduct of affairs in distant countries (in this case in the Middle East), we have come to experience for ourselves the environmental effects of an oil industry and the complexities arising from its international connections. Now we must attempt to balance change against benefit and actual use against real need, and question how and to whose advantage the benefits are being distributed. To explore the ramifications of these arguments one is led into many unfamiliar and specialised fields of study: the geology of oil-bearing rocks and their accessibility in the complex conditions of an off-shore field, the effects of drilling on the life of the sea-bed, the fouling of installations by offshore marine life, the effects of pipelines on fisheries, the effects of oil spills on sea-bird colonies, the siting of shore installations, the problems of manning and of grafting accommodation and services into an existing and quite different community and landscape, the chemistry of the oil and its potential uses and value, and its probable markets. These are only a selection of the aspects that bear on the management of this particular environmental resource, to be assessed in terms of environmental, social and economic costs and benefits.

It is too much to expect even an educated public to know answers to these questions (does the oil industry know all the answers?). On the other hand understanding should grow and management be improved if there is better public appreciation of the different components which connect together into this system, and the different processes which are liable to be affected as a result of any change or development which takes place. Environmental Impact Assessment is now required in many industrialised countries before new developments are authorised. So far the UK government has been lukewarm, to say the least, to an EEC directive on the matter. Perhaps more informed public opinion would give needed encouragement.

Another topical transnational problem currently receiving much publicity is acid deposition. The damage caused by atmospheric pollutants to public health, to buildings and monuments and to plants and animals has been known for a long time and successful measures were taken to improve conditions close to emissions. It was the Scandinavians, however, who alerted us to the probability that our emissions were only being carried further away, to the detriment of their forests and fresh waters. Similar effects are also being found now in Scotland and other

countries. This is at present a public issue of some concern, where national boundaries do not operate. The most obvious remedial action — cleaning the effluents at source — while technically possible is expensive (although how expensive is disputed). There are also other complicating and interacting factors — other sources of effluents (volcanoes, for example), other causes of acidity in water (e.g. drainage from conifer plantations), other causes of poor tree growth or fish mortality. Again unravelling these taxes the wisdom of experts. The public is inevitably drawn in, however, either to defend the environment or to pay higher fuel bills, and should therefore have some capacity to recognize the factors involved and judge the credibility of emotive or commercially motivated public statements from whichever quarter.

The list of environmental problems, operating at long range, by which Scots are affected, could be extended almost indefinitely. Some of our fishermen have been heavily involved in disputes with other communities or countries over the right to fish in certain waters, e.g. off Cornwall or Iceland, and over the encroachment of foreign fishermen on certain stocks (e.g. salmon) or on our own inshore fishing grounds. They have also been in dispute with conservation interests concerning the grey seal population, not a rare species here but regarded as in need of protection by the international conservation community, since we have a high proportion of the world population. These disputes tend to be linked to the whole history of over-fishing and demand at least recognition of a cluster of factors on which sustained exploitation of marine fish and other stocks depends. The development of a nuclear energy industry is another problem with international implications, especially since the UK contracts to re-process some of the wastes of other countries. Transport of radio-active wastes and their disposal into the sea or into deep borings in impermeable rock have been hotly debated issues in Scotland in recent years.

New environmental concerns have arisen as a result of our entry into the European Economic Community. If it is already difficult for us to appreciate the network of relationships which should guide environmental decision-making in our own country, how much more difficult it is to set this in a European context. The problems inherent in applying the Common Agricultural Policy in Scottish agriculture are a case in point. The EEC-funded Western Isles Integrated Development Programme for the improvement of farming in the area raised additional public debate through lack of the funds necessary to safeguard the unique natural history of traditionally managed machair lands. The Community's own directive on Environmental Impact Assessment has already been noted. Our new affiliations thus pose additional problems for the educator hoping to prepare people for life in local communities that are increasingly influenced by the wider communities in which they lie.

Ultimately overshadowing all of these are our relations with other countries outwith the EEC, with all their environmental implications. Each group — the other westernised industrial nations, the Warsaw Pact countries and the Third World — presents its own international environmental issues, whether they be associated with commercial competition, defence spending or resource exploitation. We campaign to save tropical rain forest but happily use tropical hardwoods, we recognise protein deficiencies in Third World countries and use their fish meal to produce our bacon, we deplore exploding populations but continue to take an excessive share of the resources which might help to reduce the explosions, we reduce overseas aid programmes but increase defence weaponry already prohib-

itively destructive. Alas none of the problems is as simple as the last sentence might imply: each is only a part of a complex system of relationships within which change must be effected with care. But it is important in a world experiencing the potentially lethal effects of all sorts of stresses, that there should be better understanding of the role the developed nations might play, even to the point of foregoing some of the imagined necessities of a northern industrialised life style.

Some of the most sensitive environmental problems that are currently breaking their bounds are about the social and cultural environment. It is increasingly necessary to recognise the gaps already hopelessly wide between the people of industrialised and developing countries, as also within many countries between those who can maintain or improve high living standards already acquired, and those others who can scarcely secure basic necessities. Therein lies a prescription for intolerance and conflict.

Education must look seriously at the educational response appropriate to such documents as the Brandt Report,[11] and its ethical dimensions. Unfortunately for many this will be the most difficult area in which to base teaching on direct experience. Experiments which have been successful elsewhere in twinning primary schools with schools in developing countries, for the exchange of news, materials and resources, might usefully be developed more widely. More inventive approaches to appreciating Third World conditions deserve maximum support (one example is the programme mentioned on p.13).

Friction has also developed closer to home, in the growing ethnic mix of our own cities where economic circumstances and cultural characteristics become intertwined. As in international relations, value is apt to be accorded to conformity rather than to the cultural diversity of insights and approaches from which a more mature system might evolve. Many young people are willing and anxious to work for better understandings, and it is important that their education should encourage the spread of such idealism so that economic and cultural gaps, both national and international, may be reduced as have the barriers to contact.

The Environment Recognised Nationally and Internationally

With such a growing list of problems on both national and international scales there is no shortage of bodies willing to offer advice on how they should be tackled and in particular pointing out the need for education. Exhortations to educators to respond are, however, still commoner than practical advice as to how they should do so, or the resources with which new programmes may be developed.

Nevertheless, faced with issues that attract growing public concern, it is not surprising that the main political parties in Scotland now incorporate statements of concern for the environment in their policies, and of the need for education to address its problems. The Conservative Party in government has expressed its interest through support for the recent measures taken to increase environmental elements in school curricula, reported in earlier chapters, and also through support for the educational role of the CCS; to prevent environmental issues becoming too remote from the public, CCS has been included among the bodies brought within the scope of the Ombudsman. A Scottish Liberal Party document calls for 'a major educational drive to explain the problems and threats'. A Labour Party paper adopted by the 1978 party conference points Environmental Education towards the development of a participatory community, including, where possible, practical

work in the environment, and seeing it as a part of continuing education beyond school. The Social Democratic Party, in its most recent statement of policy on the environment, stresses the public's fundamental right to information on the environment, provided in an accessible form so that lay people may understand conflicting choices (and presumably take part in resolving them). A Scottish National Party policy document on the environment stresses measures for maintaining the quality of life which would certainly require an informed public in support.

As a political response we cannot ignore the rise of the Green Parties in Europe (until recently the Ecology Party in this country). These seem to draw their support from the whole political spectrum, but are most often associated with the young, the better educated and the middle-class, linked in the public mind with particular emotive issues rather than with a strong alternative policy for government. Though few in numbers they increase public debate of environmental issues and, in consequence, exert pressure on the policies of the other parties.

At international level such organizations as UNESCO, UNEP, OECD, the Council of Europe and even NATO all have interests in Environmental Education and have held conferences or published documents in support. Here Scotland is in a somewhat anomalous position. Having its own distinctive and highly regarded tradition of education and having made major contributions to international developments in Environmental Education, Scotland is now 'represented' internationally by the Department of the Environment which has few powers of any kind in Scotland and no experience of Scottish educational concerns.

Since 1974 the most prestigious statement of the nature of Environmental Education, and of strategies for its development, must be that delivered by UNESCO in the recommendations of the intergovernmental conference held at Tbilisi, USSR, in October 1977.[79] It is regrettable that Scotland did not have a representative in the UK delegation, although it is believed that this was not for want of an invitation. There is no need, however, for Scotland to regard itself as a backwater of this particular stream; the Tbilisi recommendations included many of the points which had already been succinctly made in the Gilbert Report and which, if followed up, would keep Scottish education in a leading position (see p.57).

Scottish ideas and experience were, however, successfully channelled into the work of the Council of Europe,[19] with benefits both here and abroad. The Council produced one of the most important contributions to European Conservation Year 1970. In turn this helped to create the climate in which the Gilbert Report was written. Not surprisingly, that report had great influence on the continent of Europe: in particular it was praised in Belgrade, Helsinki and Tbilisi at the series of meetings already noted (p.2) which attempted to make a global framework for Environmental Education into a reality.

A remarkable series of Council of Europe practical training courses was held in the 1970s. The courses were not attended by the professional conference-goers but by practitioners active in environmental and educational work in the member states of the Council. All this was achieved by a co-operative effort in which Scotland played a key role in planning and evaluation. Seven training courses were designed to demonstrate a series of new practical approaches to a wide range of environmental problems. They were as follows:

1975 New and traditional approaches to biology teaching, including fieldwork in rural and urban areas which introduced the problems of teaching about ecology, the living world and natural resources.

1976 New ways of introducing a more meaningful approach to well established classroom disciplines, particularly history, by means of practical outdoor work, learning about the students' place in modern society through archaeological experiments and related techniques and reading townscapes and landscapes.

1977 Understanding the city and its hinterland and showing how a concentric approach and practical work can help the city child.

1978 New approaches in community education in areas of multiple deprivation including an examination of hostile attitudes to environmental improvement and conservation which may be found in Third World countries, where conservation is a luxury and sophisticated educational aids out of the question.

1979 A follow-up to this course specifically focused on stimulating public participation and community involvement, which demonstrated how one city has experimented with these techniques, and the dangers, pitfalls and successes which were encountered.

1980 Recreational use of water and the conflicts which arise in terms of conservation of those resources and their value to other water users; the proposal of new guidelines to reduce these conflicts by employment of educational techniques and measures.

1981 Environmental problems of over-development of tourist facilities in some Mediterranean areas, including working out schemes of environmental interpretation and the design of new environmental indicators with OECD to assess these problems and reduce some of their impact.

In addition, the first international workshop on environmental interpretation in Europe was held in Scotland in 1978, planned and hosted by the Countryside Commission for Scotland.

Representation has always been most productive with quasi-governmental and non-governmental members' attendance in this international field, e.g. the European Community Environmental Education Network (see p.22), the European Environmental Bureau (EEB), IUCN and others. IUCN, for example, initiated many of the UNEP Environmental Education workshops and master-minded the production of many of the discussion papers. Scotland has been well represented throughout this period on IUCN's Commission on Education and especially the North West Europe Committee which concerns itself with the shared environmental and educational issues of this region. A leaflet on coastal conservation 'Care for our Coast', was an internationally circulated product of this committee, produced in Scotland in collaboration with Shell UK.

The World Conservation Strategy

One particular international initiative may have a formative influence on the

objectives and content of Environmental Education in the future. This is the World Conservation Strategy (WCS),[40] produced by IUCN in 1980 with the support of UNEP and WWF and in collaboration with UNESCO and FAO. Its overall aims are to ensure the maintenance of essential ecological processes and life-support systems, to preserve genetic diversity and to ensure sustainable utilization of species and ecosystems. In two vital respects it is an advance on previous programmes for environmental conservation. One is that it aims to be active as well as reactive, to plan not just to repair. The other is its recognition of man's place in the systems to be conserved. By its emphasis on sustainable development it attempts to match the objectives of conservation with the needs for development of the resources essential to reduce poverty and to lead to a more balanced human life-style.

Since the advice given in WCS is global it is necessarily couched in fairly generalised terms. Different countries have, however, been encouraged to adapt its principles to their own conditions and to produce national strategies. A UK Conservation and Development Programme (CDP)[77] was launched in 1983 following lengthy and wide-ranging consultation, and adapts the global strategy to an urban, industrialised nation. A Centre for Economic and Environmental Development (CEED) was set up in London in 1984 with a governing body representing many of the UK conservation organizations (including Scottish ones). Its task is to advance the recommendations of the CDP, but it does not as yet have a Scottish base.[14]

The CDP reviews the British scene and extends WCS aims for UK action into three broad areas — integration of conservation of living and non-living resources with development, the need for a sustainable society in which both physical and psychological needs are met, and the development of a stable and sustainable economy through practices of resource conservation in all spheres of activity. The kinds of policies it recommends are sub-divided for discussion into those concerning the rural, urban, industrial and marine environments, overseas environmental policy, education and ethics. An overview report picks out those proposals on which rapid action might be taken. The education section (also published separately by the CEE[7]) offers a review of Environmental Education in the UK and makes recommendations for its further development, with a special section on Scotland based on discussions here in which the section reporter participated. The whole strategy, however, is of importance to education, for its content offers much guidance to educators about the important issues facing us, while its aims, objectives and recommendations are only likely to succeed if they have the support of an informed and prepared public. There is still a major task to be done, however, to bridge the gap between the ideas and attitudes on which the strategy is founded and the practical requirements of teachers. It is worth bridging, for this is the broadest consensus yet of the measures necessary to save the world from ecological breakdown.

Environmental Education as a Global Concern

So, even in the last ten years, the national and international dimensions of Environmental Education have considerably expanded, as educators are increasingly expected to prepare young people for a shrinking world in which the options for survival are still allowed to diminish. Education does not generally adapt quickly enough to accommodate such a rate of change, but pressure to adapt is now being exerted internationally as well as nationally. As a further example of an

educational initiative by an international group, the Club of Rome commissioned its own assessment of how education should develop to match the challenge of the times and in 1979 produced a report which favours a new 'innovative' pattern of education, in contrast to the traditional 'maintenance' pattern.[10] It is characterised by such approaches as problem formulating rather than solving, in open rather than closed situations, questioning rather than advancing assumptions and values, synthetic rather than analytic, anticipatory rather than adaptive, and so on. If these approaches are indicative of how education may develop in the future they certainly favour the philosophy and methodology of Environmental Education.

Ecological disaster now takes its place alongside nuclear warfare as a threat to the future of humankind. Whatever the means, the need is now urgent for education to prepare people to counter the threats. All sorts of pressure groups have developed to fill gaps in public understanding according to their own interpretations. It would be perilous to leave to these agencies the whole task of informing the public of the issues involved in environmental management. A balanced educational policy to improve awareness and understanding of the man/environment system, to encourage wiser value-judgements, and to guide both the inevitable progress of environmental change and the behaviour of people towards it, must be a duty of the formal education system, as well as a concern of the non-formal agencies.

CHAPTER 7

CONCLUSIONS

Environmental Education in an Age of Change

During the last ten years, since the Gilbert Report, much has happened around us. On a global scale we are watching the acceleration of change in our environment. Expanding technology and world population make increasing inroads on diminishing resources. Misuse of resources creates uncertain prospects for the future. Nationally this is reflected, for example, in changing patterns of employment and in the expectancies of young people for a fulfilling life. At home the structure of local government has changed and so have some of the structures of our education system, making this a natural time for re-adjustments. The need for Environmental Education, to improve the guidance of change with more understanding of the inseparability of man and his environment, has become better articulated at every level.

Having accepted this need it is not always so easy to define the constitution of Environmental Education. It will be evident to the reader of this report that the several authors who have contributed to it differ not only in their styles of writing but also to some extent in their perceptions of what Environmental Education should be. This reflects natural variation among people and institutions: it might be one of the collective strengths of environmental educators that they can contain such diversity of view within a common set of objectives. Diversity within a system is a quality to be valued whether the system be ecological, cultural or social. 'Learning for Living' implies the development of individual interpretations of environmental relations which are naturally variable with place and circumstances. It is still necessary, however, to recognise the common core round which diversity is organized. Many attempts have been made to define it but the most internationally accepted foundation statement must still be that from Tbilisi.[60]

The Tbilisi recommendations (see also p.53) stressed the features now generally agreed to characterise Environmental Education. It is to be provided for all ages and levels of education and by all the means, formal and informal, available for education. It is comprehensive, lifelong education responsive to the changes of a changing world. It is holistic in its approach and interdisciplinary, recognizing the interdependence of the many elements in man-environment systems. It links the acts of today with the consequences for tomorrow. It is an active problem-solving process, encouraging initiative, participation, responsibility and commitment to a better future. To this the Gilbert Report, and many others, would add its role in developing an environmental ethic.

Environmental Education in School

Significantly Environmental Education was seen at Tbilisi as a powerful contributor to renovation of the educational process. This is not to be achieved by a further subject tagged onto the curriculum but, in the words of the Gilbert Report, means something which 'should permeate the whole curriculum both inside and outside the school'. It calls, in other words, for a realignment of educational philosophy. But not everyone welcomes renovation, as the Munn and Dunning committees and those engaged to follow up their advice know all too well (along with many others before and since). Problems of entrenched subject interests, the

difficulties of changing teaching methods, inflexible timetabling and management structures, ideas of subject status, the demands of certificate examinations and apathy in high quarters are all among the obstacles referred to in earlier chapters. To overcome them, and to maintain the development of Environmental Education in competition with other innovations at a time when educators are already over-burdened and under-financed, requires a higher degree of commitment than we have generally encountered from those ultimately responsible for the curriculum.

Under these circumstances we should not underestimate the quality of what has developed since 1974. Much of it is the product of individual enthusiasm and voluntary effort. Following the Gilbert recommendations we have noted many individual and group initiatives and useful publications from schools, local authorities, colleges of education and elsewhere. Now the Primary Education Development Project, the 10-14 programme, some of the new Standard Grade courses and the 16+ Action Plan all offer fields for expansion of environmental work. While these certainly indicate progress some difficulties yet remain in the present position:

(a) The Work is scattered and disorganized, both between primary and secondary schools and within secondary. It is quite possible for some pupils to pass through school without ever encountering environmental teaching as here understood, while others may be faced with popular topics (e.g. pollution) so often during their career, unco-ordinated and in separate contexts, that they become disenchanted with the whole theme. There is little sign in most schools of the co-ordinators or co-ordinating committees envisaged by Gilbert nor of his progressive programme throughout the educational career of the student.

(b) At secondary level, of the new courses being introduced at Standard Grade, those which offer the best opportunities for Environmental Education are at Foundation and General levels and therefore likely to miss the most academically gifted pupils from whom future decision-makers will probably be recruited. Existing certificate syllabuses, even in the obviously relevant subjects such as Geography and Biology, have not moved significantly towards the Gilbert criteria for Environmental Education. It seems therefore that the most potentially influential members of the future population are being missed by current developments, at least after primary school.

(c) Environmental Education has been fairly described as somewhat diffuse. This can be countered by providing it with an agreed internal conceptual structure and clearly defined aims and objectives. These exist at several levels provided by different agencies, but a version is needed which has an official seal of approval for Scottish education, around which curriculum developers can build.

It seems likely that for school education such difficulties can only be resolved at the highest level by provision of the kind of support which other curriculum components already receive. It is in the nature of Environmental Education to be far-reaching: such a support group might well look forward to the more radical innovations needed if the Tbilisi recommendations are ever to be effected.

The Continuity of Environmental Education

The distinctions drawn between different levels and forms of education are becoming less marked. More attention is being paid to the transition from primary to

secondary and from secondary to post-school education. Schools are increasingly involving themselves with adult and community education. In recognition of this the subject range of this report has gone well beyond that of the Gilbert Report, and in doing so has illustrated how school education has benefited while post-school education still awaits its Gilbert.

For post-school education this is a time of opportunity to harness underused talents and develop constructive participation in environmental management and improvement, when serious attempts are being made to increase public involvement in environmental planning, and when more and more people have time to fill, whether through unemployment or early retirement. There is the possibility, as we have suggested in Chapter 4, to use Environmental Education as a structuring framework for a positive response to the challenge of the times. Again a co-ordinating agency is needed and work necessary to supply conceptual structures and to design strategies for guiding the available resources of manpower and interest into productive channels of environmental care. At a time when self-help is publicly commended, support for a central resource-base to sustain it should be a worthwhile investment.

The Role of Contributing Organizations

Increasing benefit to school and post-school education, as well as to informal education at all levels, is coming from the various organizations, statutory and voluntary, concerned with town and countryside management and conservation of both natural and man-made resources. They supply information, materials and expertise of a special kind which are important contributions to a field of study in which recognition of the need for specialist input, and the capacity to integrate it, are essential qualities. The complexity of environmental issues is such that educators always face the risk of over-simplifying them so as to make them manageable, and arriving at oversimplistic solutions to the practical problems they raise. Environmental Education is more about cultivating attitudes and skills and developing concepts than providing solutions to specific problems. But raw materials are needed from which these attributes can be cultivated: the role of the non-educational organizations in supplying well worked and intelligible case material for these purposes may be specially important.

The conservation organizations should also develop their own educational potential as far as they can. For some it seems difficult to advance beyond information campaigns directed towards limited and sometimes short-term objectives. Important as these often are the long-term survival of their achievements will depend on continuing understanding and sympathy from a public who may have to pay in money or convenience for their maintenance. These organizations should not, therefore, allow themselves to be kept apart from the more formal processes of education.

Being effective in education, however, makes demands on the resources of voluntary and even statutory organizations of which some are undoubtedly short. Some Scottish organizations suffer from being provincial branches of UK organizations. Those which are separate may still suffer by being distanced from the main centres of wealth and power. It is especially unfortunate that the Special Grants Programme of the Department of the Environment, successor to the Small Grants Programme from which many bodies south of the border have benefited by

management grants, has seemingly no counterpart in Scotland. This position appears to be discriminatory and should be rectified.

Drawing the sytem together

Environmental Education calls for a holistic approach to human and environmental issues, a positive kind of approach which has been growing over the past ten years to many multifaceted fields — human health would be another relevant example — generally linked to our increasing familiarity with, and access to, computers and their capacities to handle and analyse complex systems. We need to make full use of these technological developments which are likely to accentuate the trend over the next ten years towards holistic approaches and interpretations.

No doubt an increasingly holistic view will also be taken of education itself. The introduction of a recognised and co-ordinated structure for Environmental Education in schools would make it easier to design suitable adult and community programmes, and easier also for conservation and other outside bodies to structure their own educational activities for maximum efficiency and economy. Both in and out of the formal education system the variety of environmental components is, however, still diffuse, 'bitty', unrelated and sometimes uneconomic. To pull it together SEEC has recommended the development of a Scottish Centre with full-time staff, a need specifically endorsed in the education section of the UK Conservation and Development Programme.[77] It would be representative of the many organizations involved, able to link developments in the school sector with others elsewhere, able to co-ordinate activities, equipped to serve as a channel for information concerning resources through SEINE (p.72) and its connections with national and international data-base networks, and of sufficient calibre to initiate and serve as a focal point for the research and development needs of Environmental Education in Scotland.

The Changing Environment of Education

One may now look forward to a new consideration of what we may call the environment of education itself, the conditions in which it is undertaken, the interactions between educational institutions and the wider community. Those responsible for the guidance and conduct of education must be seen to value environmental quality in their own affairs if they hope to convey respect for it to others. Long-term environmental considerations should not be allowed to be obscured by short-term political advantages in this any more than in other processes of change.

The characteristics of environmental quality are cultural and social as well as physical. Where physical deficiencies may be met only with apathy, cultural and social ones are apt to arouse opposition from deep emotional roots within some of the groups affected. Even such modest changes to the environment of education as child and student centred learning, and the encouragement of public participation in planning, are not met with automatic enthusiasm. The best-planned endeavours of educators may come to naught where a socio-cultural environment beyond their control is unsympathetic or opposed to their implications. Whether we welcome it or not the different components of the educational environment cannot be separated.

Learning for Living

The ten years since 1974 have witnessed considerable change in all aspects of

the environment in which we live, in our perceptions of it and in our recognition of the educational responses that we need to make to adapt to the change. We may be sure that in the next ten years the rate of change will not decline. As pressures mount on people and resources we may expect those concerned about particular consequences of change to become more partisan and more emotional; confrontations between opposing beliefs, deeply held, may only make it easier for the people who see their own interests threatened thereby to manoeuvre those concerned for environmental quality into the semblance of a cranky minority.

Learning for Living means growing up learning to take responsibility for one's own learning and the quality of one's environment, with an increasing awareness of obligations to others and to the natural world. A constructive environmental policy backed by a balanced educational programme aimed to foster environmental competence, to identify the health of one's environment with one's own health, to encourage rational participation in the development for all of a sustainable life-style, for the future as well as for the present, this is the policy we must continue to work for in the next ten years. Our recommendations may appear to some over-modest; in our view they are reasonable, realistic and practicable, dependent neither on radical reorganization nor on great expense. But they are the least that we can contemplate as an effective policy.

CHAPTER 8

PRINCIPAL RECOMMENDATIONS

1. The Gilbert Report

1.1 The Scottish Environmental Education Council (SEEC) commends to all concerned in the direction and conduct of education the continuing importance of the Report of HM Inspectors of Schools on Environmental Education (referred to as the Gilbert Report), published in 1974, which was internationally recognized as a leading statement of the case for Environmental Education, of the contribution that it can make to the realisation of an environmental ethic, and of the intrinsic educational value of the programme. In the light of developments over the past ten years SEEC urges educationalists at all levels to affirm or reaffirm their commitment to the principles of the Gilbert Report.

2. Environmental Education

2.1 In particular SEEC commends the direction of education, formal and informal, towards the dissemination of knowledge, the development of concepts and skills and the fostering of attitudes towards the environment consistent with conservation of those systems upon which we depend and with the sustainable development of their resources.

2.2 It commends practice in critical assessment of current environmental issues, in decision-making, personal involvement and participation with others in the guidance of environmental change, and in fostering a sense of responsibility for the quality of the future.

3. Education in School

3.1 SEEC reaffirms the need for Environmental Education to permeate the whole curriculum in and out of school, and the need for adequate planning and co-ordination of measures towards this end.

3.2 In the circumstances now pertaining it recommends the establishment in Scotland of a properly authorised group charged:

(i) to co-ordinate the total programme of Environmental Education through primary and secondary schools;

(ii) to devise ways of enabling all pupils to receive Environmental Education, and to initiate and co-ordinate modifications of existing syllabuses to achieve this purpose;

(iii) to ensure the relation of all work to an agreed internal conceptual structure with common aims and objectives.

3.3 It further reaffirms the recommendation that every school should have adequate internal arrangements for planning and implementing such a programme.

4. Adult and Community Education

4.1. SEEC commends the proposition that Environmental Education begun in primary schools should be pursued through secondary school and into informal education and later life.

4.2. Noting that in the present fragmented state of adult and community education environmental topics are a neglected field;

noting further the opportunities that now exist for public participation in environmental planning;

noting also the changing patterns of 'work' and 'leisure' time (however they may be redefined);

SEEC recommends that Local Learning Centres be set up, preferably but not necessarily through locality administrations, within which environmental study should be an important component of a comprehensive curriculum. Environmental learning should be developed from studies of local issues and structured on the basis of the model recommended for schools.

5. Resources for Education

5.1. Appreciative of developments which have taken place during the last ten years SEEC reaffirms the need for continued support for, and further extension of, resource centres at all levels, local study areas and residential centres for fieldwork, so that all schools may be able to benefit from these facilities, together with other users in the formal and non-formal sectors.

5.2. It recommends support for projects and programmes to exploit the growing availability of microcomputer technology as an aid to Environmental Education, and to develop a Scottish data-base.

5.3. It views with satisfaction the growing interest among non-educational organizations concerned with environmental management to provide support for education in various forms, and urges not only that they continue to develop these activities but that they also be given opportunity and support to come closer to the mainstream of formal education where their particular expertise may reinforce the quality of environmental understanding and interpretation.

6. International Connections

Noting the increasing activity among international organizations in Environmental Education SEEC recommends that all encouragement and assistance should be given to Scottish educators to take part in activities beyond the bounds of Scotland, which reinforce the global network of Environmental Education and promote international understanding and mutual respect.

7. Centre for Environmental Education

Noting the need to co-ordinate the educational activities and potentials of an increasing number of bodies, statutory and voluntary, in the environmental field, to initiate further research and development, to advise on all matters pertaining to Environmental Education, to channel available resources so as to achieve maximum benefit therefrom, and to work continuously for public understanding of the educational implications of current environmental issues in an objective and balanced way;

SEEC urges that support be given to the development of a Scottish Centre for Environmental Education, with full-time staff able to provide for Scotland the service already available elsewhere in the UK, and, in collaboration with other national and international organizations, to promote through education a level of environmental competence consistent with the needs of the modern world.

Several of the above recommendations, especially under paragraphs 1, 2, 3 and 5, reaffirm the recommendations of the Gilbert Report which have presumably been government policy during the last ten years. The Scottish Environmental Education Council urges all those concerned in the design, direction and conduct of education to adopt and implement all of the above recommendations within the ten years ahead.

LIST OF ABBREVIATIONS

AGEET	— Advisory Group for Environmental Education in Tayside.
APT	— Area of Priority Treatment
BBC	— British Broadcasting Corporation
BECRC	— Bellarmine Environmental Community Resource Centre
BTCV	— British Trust for Conservation Volunteers
CCC	— Consultative Committee on the Curriculum
CCS	— Countryside Commission for Scotland
CDP	— Conservation and Development Programme (UK)
CEE	— Council for Environmental Education
CEED	— Centre for Economic and Environmental Development
CNAA	— Council for National Academic Awards
COPE	— Committee on Primary Education (of the CCC)
DES	— Department of Education and Science
EEB	— European Environmental Bureau
EEC	— European Economic Community
FAO	— UN Food and Agriculture Organization
FE	— Further Education
F(F)WAG	— Farming (Forestry) and Wildlife Advisory Group
GEAR	— Glasgow Eastern Area Renewal Project
GEE-UP	— Glasgow Environmental Education Urban Projects
GTC	— General Teaching Council
HMI	— Her Majesty's Inspector of Schools
HMSO	— Her Majesty's Stationery Office
IMEP	— International and Multicultural Education Programme of the CCC
IUCN	— International Union for the Conservation of Nature and Natural Resources
MSC	— Manpower Services Commission
NATO	— North Atlantic Treaty Organization
NCC	— Nature Conservancy Council
NTS	— National Trust for Scotland
OECD	— Organization for Economic Co-operation and Development
P1-7	— Primary grades 1 to 7
RSPB	— Royal Society for the Protection of Birds
RZSS	— Royal Zoological Society of Scotland
S1-6	— Secondary grades 1 to 6
SAGT	— Scottish Association of Geography Teachers
SCE	— Scottish Certificate of Education
SCES	— Scottish Committee on Environmental Studies in the Primary School
SCOTRES	— Scottish Resources in Schools
SCP	— Scottish Conservation Projects
SCRA	— Scottish Countryside Rangers' Association
SCT	— Scottish Civic Trust
SDA	— Scottish Development Agency

SED — Scottish Education Department
SEEC — Scottish Environmental Education Council
SEEG — Strathclyde Environmental Education Group
SEINE — Scottish Environmental Information Network for Education
SFSA — Scottish Field Studies Association
STEAC — Scottish Tertiary Education Advisory Council
SWT — Scottish Wildlife Trust
TEEP — Tayside Environmental Education Project
TVEI — Technical and Vocational Education Initiative
UKEEIMP — UK Environmental Education Information Management Project
UNEP — United Nations Environment Programme
UNESCO — United Nations Educational Scientific and Cultural Organization
WCS — World Conservation Strategy
WWF — World Wildlife Fund
YTS — Youth Training Scheme

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FURTHER INFORMATION

The Scottish Environmental Information Network for Education (SEINE) was launched by SEEC in 1985 to provide an information service in Scotland, in conjunction with the service already provided by CEE to the rest of the UK (see p.2). SEINE has been set up with the support of the Manpower Services Commission and Paisley College, where it is presently located.

The computer data-base carries files on materials such as books, charts, posters, slides and other information concerning field resources e.g. country parks and field centres. The materiographic information is sorted into subject areas and age groups, e.g. materials on pollution suitable for primary school pupils.

The system may be accessed by postal or telephone inquiry (free to SEEC members), by obtaining floppy discs or by direct access for those possessing a modem and appropriate software. A leaflet describing the system may be obtained from SEINE, c/o Biology Department, Paisley College, High Street, Paisley PA1 2BE.